年度報告
Annual Report

數據科學學院
Faculty of Data Science

2024

澳門城市大學
Universidade da Cidade de Macau
City University of Macau

FDS
數據科學學院
Faculty of Data Science

Welcome Message

As we approach the end of the year, reflecting on each step the Faculty of Data Science has taken over the past year fills our hearts with immense emotion and pride. This year has been characterized by a blend of innovation and breakthroughs, as well as a time when all faculty and students have joined hands to create brilliance together.

In the past three hundred sixty-five days, FDS has achieved remarkable accomplishments in various fields, including teaching, research, academic exchange, and community service. Behind each achievement lies the wisdom and hard work of all faculty and staff, as well as the efforts and dedication of every student. We have witnessed significant advancements in academic research and deep explorations, experienced steady improvements in teaching quality, and felt the endless power that teamwork brings.

I would like to extend special thanks to every member of the FDS, whether you are the teachers standing at the podium sharing knowledge or those immersed in research laboratories, the administrative staff who work silently behind the scenes to ensure the smooth operation of the faculty, or the students who are diligent and dream big. It is your hard work and relentless pursuit that have forged the brilliance of our faculty today. At the same time, we express our sincere gratitude to the leaders, colleagues, and friends from all walks of life who have continuously cared for and supported the development of FDS.

Looking ahead, we are filled with confidence and anticipation. In the new year, FDS will continue to uphold the motto of " Virtue, Knowledge, Practice " adhere to the spirit of "Seeking Truth and Innovation, Pursuing Excellence," deepen educational reforms, strengthen interdisciplinary integration, promote the transformation of research achievements, and strive to cultivate more talents in data science and computer technology with an international perspective and innovative capabilities. We believe that through the collective efforts of all faculty and students, the future of the Faculty of Data Science will be even more brilliant.

Let us join hands and move forward together in the new year, writing an even more splendid chapter for the Faculty of Data Science!

Contents

Introduction to the Faculty of Data Science

Overview of the number of students and faculty members in the faculty in 2024

In 2024, Faculty of Data Science has made significant progress and breakthroughs in many fields, especially in academic construction, faculty and student scale and scientific research. By the end of 2024, the overall scale of FDS will be further expanded, with 1,451 students and 49 full-time staffs, including 45 full-time academic staff and 4 administrative staff. The faculty has played a key role in cultivating high-quality data science talents, promoting innovative scientific research results, and providing high-quality academic support. The distribution of programs and student numbers of FDS is detailed in the table below:

Table 1. Overview of Faculty Programs

FDS Program Overview						
Program Name	**Number of students**					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Deferral**	**Total**
Bachelor of Science in Intelligent Technology and Services	170	173	183	157	-	683
Bachelor of Science in Computer Science	41	43	-	-	-	84
Bachelor of Science in Data Science and Big Data Technology (co-organized with Minzu University of China)	120	119	-	-	-	239
Master of Data Science	78	76	-	-	6	160
Master of Computer Science	56	38	-	-	-	94
Doctor of Data Science	37	37	39	-	8	121
Doctor of Computer Science	38	32	-	-	-	70
Total number of students	**540**	**518**	**222**	**157**	**14**	**1451**

Among them, doctoral students account for 13%, master's students account for 18%, and undergraduates account for 69%. The specific situation is shown in Table 2.

Table 2. Student levels

	PH.D.	**Masters**	**Bachelors**	**Total**
Number of students	191	254	1006	1451
Percentage	13%	18%	69%	100%

Faculty of Data Science continues to optimize its curriculum and disciplinary direction and is committed to providing students with an academic environment that keeps pace with the times, is challenging and innovative, and has laid a solid foundation for cultivating high-quality talents in the field of data science. By the end of 2024, the Faculty of Data Science has a total of 45 full-time academic staff and 4 administrative staff. Among the full-time academic staff, there are 5 full professors, 4 associate professors, 33 assistant professors, 1 lecturer and 2 distinguished professors. The academic team members have diverse backgrounds, covering many cutting-edge fields such as data science, computer science, cybersecurity, artificial intelligence, etc., and can provide students with high-level teaching and scientific research guidance.

To meet the needs of the faculty's future development, FDS is actively promoting a personnel introduction plan. To support teaching and research work in 2025, the faculty plans to recruit 16 new academic staff. These new members will officially join the faculty in August 2025 to further enhance their teaching and research capabilities. By then, the total number of full-time academic staff in the faculty will exceed 50. As the faculty continues to grow, FDS will be able to more effectively promote the progress of academic research, provide students with richer and more diverse academic experiences, and promote academic innovation and the transformation of scientific research results.

Overview of Faculty Papers Published in 2024

As shown in Table 3, the Faculty of Data Science published a total of 268 papers in 2024. Among them, 176 papers were included in SCI and 130 were listed in JCR Q1 journals. These data show the faculty's remarkable achievements in academic research and highlight the continuous improvement in the number and quality of papers published by FDS, reflecting the faculty's efforts in promoting scientific research innovation and enhancing academic influence. These achievements not only enhance the academic status of the faculty, but also provide students with more learning and research opportunities.

Table 3. Publication numbers from 2022 to 2024

	Q1	Q2-Q4	EI	Monograph	CSSCI Core Journals	General Journals	ESCI	SCI Indexed	Total
2022	41	21	14	1	1	-	2	62	80
2023	52	12	19	5	-	2	1	64	91
2024	130	34	85	1	6	6	6	164	268

Teaching and Learning

In 2024, the Faculty of Data Science has achieved remarkable results in teaching. The undergraduate, master's and doctoral degree programs in computer science successfully began to recruit students and teach in the 2023 academic year, and continued to make good progress, attracting outstanding students. These new programs not only enrich the academic system of the faculty, but also provide students with diversified learning options and promote their professional development in the field of data science. In addition, existing programs have also successfully passed the accreditation assessment. This achievement further proves the rigor and excellence of the faculty in teaching quality and academic standards. These accreditations not only enhance the reputation of the faculty, but also add value to students' degrees, making them more competitive in the job market. With the continuous improvement of teaching quality, the Faculty of Data Science is on its way to becoming an industry-leading educational institution.

Current status of faculty programs and planning of new programs

As of the end of 2024, the Faculty of Data Science (FDS) will have the following seven programs:

Table 4. Faculty programs

Degree Category	Degree Name
Bachelor	Bachelor of Science in Intelligent Technology and Services
	Bachelor of Computer Science
	Bachelor of Science in Data Science and Big Data Technology (co-organized with Minzu University of China)
Master	Master of Data Science
	Master of Computer Science
Doctorate	Doctor of Data Science
	Doctor of Computer Science

In 2024, several main programs of the Faculty of Data Science have achieved important teaching results. The Bachelor's Degree Program in Intelligent Technology and Services, the Master's Degree Program in Data Science, and the Doctoral Degree Program in Data Science have all successfully passed the re-accreditation of the Education Quality Evaluation Agency of the Ministry of Education and have received high praise. Specifically, the Bachelor's Degree Program in Intelligent Technology and Services was praised as "fully demonstrating the program characteristics of the cross-domain integration of intelligent technology and modern services"; the Master's Degree Program in Data Science was rated as "providing a clear-cut, strong and in-depth program, and exploring an interdisciplinary and diversified talent training model"; and the Doctoral Degree Program in Data Science was highly recognized for its "distinctive program characteristics and significant impact on the domestic and foreign academic circles."

The evaluation report also recommended that the faculty should increase the number of full-time teaching staff to further improve the quality of teaching and research. To this end, FDS plans to increase recruitment efforts in the next few years to further improve the teaching staff.

In addition to applying for new programs on its own, FDS also actively applying for new programs with other faculties in the university. The programs currently being applied for cover a full range of education from bachelor's to doctoral degrees, including "Bachelor's Degree Program in Electronic and Computer Engineering", "Master's Degree Program in Electronic and Computer Engineering", "Doctoral Degree Program in Electronic and Computer Engineering", and "Bachelor's Degree Program in Artificial Intelligence", "Master's Degree Program in Artificial Intelligence", and "Doctoral Degree Program in Artificial Intelligence". The application of these programs not only reflects the faculty's commitment to educational quality, but also demonstrates its pursuit of depth and breadth of disciplines. Programs jointly applying with other faculties of the university include: the "Master of Science in Health informatics" jointly applied with the Faculty of Health and Wellness, the "Master of Science in Management Analytics" jointly applied with the Faculty of Business, the "Bachelor of Science in Urban Intelligence and Informatics ", "Master of Science in Urban Intelligence and Information", and "Doctor of Urban Intelligence and Information" jointly applied with the Faculty of Innovation and Design, and the "Master of Digital Applied Linguistics" jointly applied with the Faculty of Humanities and Social Sciences. FDS has demonstrated remarkable enthusiasm and innovation in program application and actively promoted cross-disciplinary cooperation and communication in the academic community. The Faculty of Data Science is committed to promoting innovation in educational models to adapt to the ever-changing academic and industry needs. Not only strengthen the faculty's important position in the field of data science, but also provide students with a broader academic perspective and richer career development paths.

Furthermore, the Faculty has actively promoted the university to sign joint training cooperation agreements with domestic universities, and has launched joint training doctoral and master's degree programs with Shenzhen University of Technology, and has launched joint training doctoral degree programs with Shenzhen University of Technology, Yunnan University, Qingdao University of Science and Technology, Qilu University of Technology, Hangzhou Dianzi University, and Guangdong University of Technology, to jointly train students in the field of data science. Among them, the number of jointly trained graduate students has reached 35, including 9 joint doctoral students with Shenzhen University of Technology, 16 joint doctoral students with Shenzhen University of Science and Technology, 7 joint doctoral students with Qilu University of Technology, 1 joint doctoral student with Qingdao University of Science and Technology, 1 joint doctoral student with Yunnan University, and 1 joint doctoral student with Hangzhou University of Electronic Science and Technology.

Student internship and exchange

FDS has signed cooperation agreements with many companies and universities, aiming to provide students with valuable internship training and exchange opportunities, thereby enhancing their practical

ability and professional quality. These collaborations not only expand students' learning platforms, but also promote in-depth cooperation between academia and industry, providing students with a wider range of career development paths. Through these cooperation agreements, students will be able to participate in the internship programs of enterprises, gain practical work experience, and establish connections in the professional field. Table 5 lists the units that have cooperated with the faculty, covering multiple industries and fields, and demonstrating the faculty's efforts and achievements in promoting industry-university cooperation. The diversity of these partner institutions not only reflects the academic breadth of the faculty, but also provides students with a variety of internship options, helping them stand out in the fierce workplace competition.

Table 5. Internship Units

Ref	Internship Unit	Location	Participation Category
1	Guangdong University of Technology	Guangzhou	Undergraduate & Postgraduate
2	Data tells stories Big data and AI intelligent applications	Henqin	Postgraduate
3	Orbit-Spatial-temporal Big Data and Artificial Intelligence Joint Laboratory	Henqin	Postgraduate
4	NetCraft Information Technology (Macau) Co., Ltd.	Macau	Undergraduate (Local student only)
5	Guangdong Provincial First Veterans Hospital	Guangzhou	Undergraduate & Postgraduate
6	BoardWare Intelligence Technology Co., Ltd. /Pengcheng Laboratory	Shenzhen	Master students
7	Zhuhai Yingying Technology Co., Ltd.	Zhuhai	Postgraduate
8	Baidu Online Network Technology (Beijing) Co., Ltd	Beijing	Undergraduate & Postgraduate
9	Aerospace Hi-Tech Holding Group Co., Ltd.	Mainland China	Postgraduate
10	CTM - Macau Telecom Company, Ltd	Macau	Undergraduate & Postgraduate (Local student only)
11	Shenzhen Institute of Advanced Technology Chinese Academy of Sciences	Shenzhen	Doctors
12	First Affiliated Hospital of Shandong First Medical University	Shandong	Postgraduate
13	Zhuhai Institute of Advanced Technology, Chinese Academy of Science	Zhuhai	Postgraduate

Student Activities and Awards

In 2024, students of the Faculty of Data Science actively participated in various activities and competitions and achieved excellent results, demonstrating their talents and abilities. These activities not only improved students' practical skills, but also enhanced their teamwork spirit and innovative thinking. The faculty regularly invites industry experts and academic leaders to give lectures, which provide students with valuable learning opportunities, broaden their horizons, and promote the diversity of disciplines. Through these exchanges, students can not only understand the latest industry trends, but also get advice and guidance on future career planning.

The student activities organized this academic year are detailed in Table 6, which lists the time, location, and number of students participating in each activity. In addition, Table 7 shows the various competitions and awards won, further demonstrating the performance and honors of students in different competitions. These activities and competitions not only improve students' academic abilities, but also lay a solid foundation for their career development, demonstrating the comprehensiveness of the Faculty of Data Science in education and practice.

Table 6. Student Activities

Event Name	Date	Number of participants	Participation Category
Baidu・Macau Artificial Intelligence Strategic Cooperation Signing Ceremony and Wen Xinyiyan Macau Smart City Press Conference	2024/1/17	500	Teachers & students
Pengcheng National Laboratory Global Talent Introduction Seminar	2024/3/28	30	Teachers & students
Research Workshop - Information Security	2024/4/29	40	Teachers & students
Research Workshop - Artificial Intelligence Medical Imaging	2024/5/8	40	Teachers & students
Intelligent Technology and Service Program Graduate Internship and Design Briefing for 2021	2024/5/17	158	Bachelor students
Research Workshop - Data Science Theory and Algorithms	2024/5/22	40	Teachers & students
City University of Macau and Beijing University of Posts and Telecommunications jointly organize artificial intelligence and information security training	2024/8/12	60	Teachers & students
Master's Thesis Explanatory Meeting	2024/8/16	115	Master students

Doctoral Thesis Explanatory Meeting	2024/8/16	100	Doctor students
Graduate Student Graduation Design Explanatory Meeting	2024/8/22	40	Teachers & students
Teaching workshop	2024/8/22	28	Teachers & students
New Student Orientation for 24/25 Academic Year	2024/9/4	400	Teachers & students
2024 Capital Overseas Chinese Intellectual Development Conference	2024/8/27-30	115	Teachers & students
Commencement Ceremony of the Honors Class for the 2024 Academic Year	2024/9/6	60	Honors Class Teachers & students
2024/2025 Postgraduate Explanatory Meeting	2024/9/25	160	Postgraduate
Macau Science Center "Discovery and Nourishing the Heart" themed digital experience center	2024/9/28	20	Teachers & students
Honorary Class Teachers and Students Academic Trip in Shenzhen	2024/9/28-29	45	Teachers & students
Huawei ICT Competition 2024-2025-City University of Macau Roadshow	2024/10/22	80	Teachers & students
Information Security Awareness Week Exhibition	2024/10/29	2000	Society
Research Workshop	2024/11/27、12/4、12/11	60	Teachers & students

Table 7. Student achievements and awards

Competition Name	Awards	Award Winners	Instructor	Date
Mathematical Contest in Modeling	Finalist Winner	Song Li Dongxiao, Tian Xingyuan, Zhang Xinyue	-	2024/5/6
2024 China College Student Computer Design Competition Hainan Provincial Competition	Undergraduate group Third prize	Group 1: Zhang Xinyue, Tian Xingyuan, Li Dongxiao, Xie Yizhe Group 2: Xie Zihan, Lin Boen Group 3: Lu Weiyi, Liu Haijun, Chen Ruinan, Li Baixi Group 4: Song Haoyu, Zhang Xun, Wang Yinzhou, Wang Mai	-	2024/5/25
Chinese international	High priest	Li Dongxiao, Tian Xingyuan,	Jing Fengshi,	2024/6-8

college students Innovation Competition (2024) Hainan Division Competition	circuit Silver Award	Zhang Xinyue, Xie Yizhe, Chen Ruinan, Huang Yijun, Chang Shangxu, Xu Weiwenxin, Shi Weihan	Zhang Lefeng, Qi Minfeng	
The 14th "Challenge Cup" Hainan University College Student Entrepreneurship Plan Competition	Social Governance and Public Service Group Bronze Award	Wang Mengchen, Cao Zhongming, Gao Jingze, Zhao Ye, Zhao Zihou, Zhao Yangkun, Zhao Yuxi, Fan Yajun, Wang Yixiang, Liu Yumeng	-	2024/6/23
The 13th National Ocean Vehicle Design and Production Competition (South China Regional Competition)	Third prize	Yuan Ziang	-	2024/7/18
2024 (17th) China College Student Computer Design Competition National Finals	National third prize in the category of "Digital Media Games and Interaction Design"	Song Haoyu, Zhang Xun, Wang Yinzhou, Wang Mai	-	2024/7/21
2024 Shenzhen X-Institue Disruptive Innovation Challenge University Camp	Innovation Project Award	Chen Tianyu	-	2024/8/2
2024 "Yangcheng Cup" Guangdong-Hong Kong-Macau Greater Bay Area Cyber Security Competition	Hong Kong and Macau Group Award of excellence	You Sicheng, Guo Yaoqun, Zhu Kefan, Zhou Junye	Cui Sanshuai	2024/8-9/12
2024 China College Student Mechanical Engineering Innovation and Creativity Competition Smart Precision Assembly Competition	Second Prize	Zhao Ruixuan, Zhan Chuntian, Huang Tianqi	Kong Hoi Io	2024/8/17

Guangdong, Hong Kong and Macao Division Selection Competition				
Macau Youth ESG Business Challenge Finals	Second Place	Zhang Huaixin, Shi Xueru, Xu Huiwen, Wu Pengjia	Chen Xiuyi	2024/10/19
The 14th "Challenge Cup" Qin Chuangyuan Chinese College Student Entrepreneurship Program Competition National Finals	Silver Award	Li Dongxiao, Tian Xingyuan, Xie Yizhe, Zhang Xinyue, Chen Ruinan, Chang Shangxu	Jing Fengshi, Zhang Lefeng, Qi Minfeng	2024/10/29-11/2
Huawei ICT Competition 2024-2025 Macau Station	Third Prize in Computing Track College Group	Wu Yihong, Zhang Lanwei, Wang Pengxiang	-	2024/12/2

Alumni

<u>Bachelor of Science in Intelligent Technology and Services</u>

Since the establishment of the Bachelor of Science in Intelligent Technology and Services, 100 graduates have successfully graduated from our university. According to the survey report of graduates from 2023 to 2024, the majority of graduates are male (78%), while females account for a smaller proportion (22%). Graduates are mainly from mainland China (84%) and local students from Macau (16%). According to the 2023/2024 academic year graduation survey report, there are 58 second-term graduates in the 2023/2024 academic year, with a graduation rate of (95%). In terms of satisfaction with the major, (42.6%) graduates gave the highest rating of 5 points, and 35.2% of graduates gave 4 points, indicating that most (77.8%) graduates are very satisfied or satisfied with the major. In addition, (27.8%) graduates are optimistic about the prospects of the major, and (42.6%) graduates are even very optimistic. The sum of the two exceeds (60%), indicating that most graduates have a positive attitude towards the prospects of the major. As for future, (75.9%) graduates chose to continue their studies (already enrolled in master's programs and applied for spring admission), while those who chose to work (including unemployed)/internship and start their own business accounted for (20.7%) and (3.4%) respectively. These results fully demonstrate the hard work and dedication of the graduates, as well as the high-quality education provided by the faculty. They will continue to make important contributions in their respective fields in the future.

Further studies: In the 2023/2024 academic year, (67.5%) of our graduates received 1-3 conditional offers, and (25%) of our outstanding students received more than 3 conditional offers. The vast majority (90.5%) of our graduates chose majors related to computer science, such as data science, artificial intelligence, and information technology. However, relatively few graduates chose tourism services (catering management) and other majors (such as interactive media). In addition, in terms of admission to overseas universities, many of our outstanding graduates received multiple admission notices and were admitted to universities in the UK (10), Australia (6), Hong Kong (3), and Macau (13). A total of 32 students continued their studies (17 of them were admitted to famous overseas universities ranked in the top 100 of the QS World University Rankings, such as the second-ranked Imperial College London in the UK, the ninth-ranked University College London, and the eighteenth-ranked University of Sydney in Australia), and another 12 students are preparing to apply for spring campus recruitment.

Employment: In the 2023/2024 academic year, 12 bachelor's degree graduates chose to work (accounting for 20.7% of the whole class), and the employment rate of those who chose to work was (50%). Among them, 2 local Macau students joined MGM International Hotel Group and Macau Federation of Trade Unions Vocational and Technical Secondary Faculty respectively, 1 local Macau student stayed in the original unit, and 3 mainland students joined China Merchants Bank (Dongguan Branch), Habitat Technology Co., Ltd. (Shenzhen) and HSBC Software Development (Guangdong) Co., Ltd. respectively. There are 6 graduates who are unemployed (have been looking for a job for 1-3 months).

Business Start-up: In the 2023/2024 academic year, 2 bachelor's degree graduates chose to start their own business, accounting for the entire class (3.4%). The reason for one Mainland student's entrepreneurship was personal ambition and family support, while the reason for one Macau local student's entrepreneurship was to discover market opportunities.

Master of Data Science Program

Since the establishment of the Master of Data Science program, 194 graduates have successfully graduated from our faculty. According to the survey report of graduates from 2023 to 2024, the majority are male (73%), while females account for a smaller proportion (27%). Graduates are mainly from mainland China (100%). In terms of satisfaction with the major, 52 graduates (68.4%) gave the highest 5 points, and 19 graduates (35.2%) gave 4 points. In addition, most graduates are optimistic about their career prospects (40.8%), some are very optimistic (42.1%), a few have no opinion (10.5%), and some are confused (5.2%). Currently, most graduates are employed (40.8%), while a small number choose to pursue further studies (22.4%).

Employment: In the 2023/2024 academic year, employed graduates are engaged in data science-related jobs (48.1%), followed by software development (11.1%), network engineering and security (7.4%), and non-information science industries (7.4%). Most of these graduates' work in mainland China (96.3%), and

a few work overseas (3.7%). The main factors affecting their choice of current jobs are salary and benefits (25.9%) and family wishes (25.9%), followed by their own abilities (18.5%) and hobbies (11.1%). Their future career plans are mainly to continue working in the same company (88.9%), followed by plans to join other companies in data science-related industries (7.4%).

Doctor of Data Science Program

Since the establishment of the Doctor of Data Science, 50 graduates have successfully graduated from the faculty. According to the 2023-2024 graduate survey, the majority of graduates are male (87.5%), while females account for a smaller proportion (12.5%). Graduates are mainly from mainland China (100%). As for career prospects, most graduates are optimistic (50%) and very optimistic (50%). Currently, most graduates are employed (62.5%), while a few are unemployed (37.5%).

Employment: According to the 2023-2024 graduate survey, employed graduates are engaged in data science-related jobs (80%), and a small number are engaged in computer and data education-related fields (20%). Most of these graduates are employed in mainland China (80%), and a small number are employed in Macau (20%). The main factors affecting their choice of current jobs are personal interests (40%), followed by family wishes (20%), personal abilities (20%), and salary and benefits (20%).

Business Start-up: According to the 2018-2024 Graduate Survey, 8.3% of PhD graduates started their own businesses, with most choosing to start their own businesses in the technology industry. This shows that a significant number of PhD graduates are engaging in entrepreneurial ventures, especially in the technology field. This trend suggests that individuals with high academic qualifications are driving innovation and economic growth by establishing technology companies.

Research and Innovation

Overview of research areas and key points

In 2024, the faculty made significant progress in research and innovation. The faculty is committed to promoting the development of data science and has led several groundbreaking projects with a total amount of approximately MOP 7,191,275. One of the most notable funded projects is a data cross-domain security platform developed by several core members of the faculty and Xidian University. In addition to funded projects, the faculty has also published academic papers in top journals and conferences, covering topics such as cybersecurity, artificial intelligence and bioinformatics.

To share their respective expertise, members of the Academy actively participated in various academic activities and delivered keynote speeches, providing members with valuable opportunities to present their latest research results and insights into the future of data science. As keynote speakers, they discussed important topics such as new trends in artificial intelligence, the outlook for data science security, and the security coordination and privacy protection of cross-border data. Overall, the Academy has made significant progress in research and innovation in the 2024 academic year: multiple grants have been obtained, high-level academic articles have been published, and solid cooperative relationships have been established with well-known institutions. With the continued dedication and enthusiasm of colleagues for data science, the Academy will achieve greater breakthroughs in the field of data science in the coming years.

Approved Projects

The faculty has successfully obtained a research grant of approximately MOP7,191,275 for the 2024 academic year. The research areas include cybersecurity, medical data analysis, collaborative platforms and artificial intelligence, etc. These projects will support our faculty members to contribute to the development of Macau and the Greater Bay Area.

In addition, from 2024 onwards, the University of Macau will become one of the only two private institutions in the Hong Kong and Macau regions to be a supporting unit for the National Natural Science Foundation. Two young teachers from the Faculty of Data Science, Zhang Lefeng and Liu Chi, have been awarded youth projects from the National Natural Science Foundation. The approved projects are titled "Research on Parameter-Free Verifiable Machine Forgetting and Privacy Balance for Large Models" and "Research on Defense Techniques for AI Image Synthesis in Complex Open Interactive Environments." Assistant Professor Zhang Lefeng and Assistant Professor Liu Chi will subsequently represent the university as recipients of the National Natural Science Foundation youth projects at a training program for young scientific and technological talents from Hong Kong and Macau, jointly organized by the China Association for Science and Technology and the National Natural Science Foundation.

Table 8. Research projects funded in the 2024 academic year

Ref	Funding Unit	Project Title	Grant Amount	Principal Investigator	Results
1	Joint scientific research funding from the Macau Science and Technology Development Fund and the National Natural Science Foundation of China (FDCT-NSFC project)	Research on cross-border data collaborative management and privacy computing for credit reporting (2022.12.28 – 2026.01.28)	MOP $1,600,000.00	Prof. Zhou Wanlei	Published 7 papers: 1.Defense Against Graph Injection Attack in Graph Neural Networks 2.Green bond and green stock in China: The role of economic and climate policy uncertainty 3.A Literature Review on V2X Communications Security: Foundation, Solutions, Status, and Future 4.One-shot Backdoor Removal for Federated Learning 5.Towards Scalable and Secure IoTs Transactions: A New Bi-directional Payment Channel Without Third-Party Monitoring 6.Blockchain Distributed Identity Management Model for Cross-Border Data Privacy Protection 7.NeSi: Netizen Simulator for Evaluating Internet Public Opinion Analysis System Platform: Improve the cross-border data platform based on blockchain that complies with cross-border laws and regulations Education: Train 3 doctor of philosophy's students and 4 master students
2	Macau Science and Technology Development Fund—General scientific research funding	Research on health care data privacy protection model and key technologies for smart medical care in Macau (2022.09.04 – 2024.09.03)	MOP $487,000.00	Associate Professor Ying Zuobin	Published 13 papers: 1.Efficient Anonymous Authentication and Privacy-Preserving Reliability Evaluation for Mobile Crowdsensing in Vehicular Networks 2.HP-MIA: A Novel Membership Inference Attack Scheme for High Membership Prediction Precision 3.DVIT—A Decentralized Virtual Items Trading Forum with Reputation System 4.Towards Scalable and Secure IoTs Transactions: A New Bi-directional Payment Channel Without Third-Party Monitoring 5.AWI-BS: An Adaptive Weight Incentive for Blockchain Sharding

				6.Payment Channel Network Optimization Composed of Merkle Tree with Election Mechanism
				7.One-Shot Backdoor Removal for Federated Learning
				8.Efficient Decoder and Intermediate Domain for Semantic Segmentation in Adverse Conditions
				9.FedECG: A Federated Semi-Supervised Learning Framework for Electrocardiogram Abnormalities Prediction
				10.Broad Learning Model with a Dual Feature Extraction Strategy for Classification
				11.Machine Unlearning in Brain-Inspired Neural Network Paradigms
				12.Membership Reconstruction Attack in Deep Neural Networks
				13.動態聚合權重的隱私保護聯邦學習框架 Standard formulation: China Association of Graphics "Privacy-enhanced Medical Image Data Joint Modeling Specification" standard Verification platform: Construct a verification platform based on medical and health care data privacy protection Education: Train 2 doctor of philosophy's students and 11 master students
3	Open project of Macau SAR Science and Technology Development Fund, Macau Advanced Materials Research and Development Center (University of Macau)	Research on artificial intelligence-assisted nanofluidic molecule recognition (2023.10.01 – 2024.12.31)	MOP $200,000.00	Assistant Professor Ge Dongjiao	1. Ge, D., Xie, H., Bai, L., & Yan, Y. (2024, July).Takagi-Sugeno Functional Fuzzy System for Function-on-Function Regression. In 2024 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE). （ DOI: 10.1109/FUZZ-IEEE60900.2024.10611822） 2. Ge, D., Zeng, X.-J. (2024). Learning Functional Data On-line: An Evolving Functional Fuzzy-Neural System Approach. (Manuscript under review by Information Sciences)

4	Macau Science and Technology Development Fund "Technological Innovation Enhancement Plan"	Cross-modal fast image and text retrieval based on deep hashing technology (2023.11.10 – 2025.08.10)	MOP $423,800.00	Assistant Professor Wu Gengshen	So far, 5 papers have been published: 1.Fang, S., Wu, G., Liu, Y., Feng, X., & Kong, Y. (2024). Dual enhanced semantic hashing for fast image retrieval. Multimedia Tools and Applications, 1-20. 2.Zhou, X., Wu, G., Sun, X., Hu, P., & Liu, Y. (2024). Attention-Based Multi-Kernelized and Boundary-Aware Network for Image semantic segmentation. Neurocomputing, 127988. 3.Luo, Y., Wu, G., Liu, Y., Liu, W., & Han, J. (2024). Towards High-Quality MRI Reconstruction with Anisotropic Diffusion-Assisted Generative Adversarial Networks And Its Multi-Modal Images Extension. IEEE Journal of Biomedical and Health Informatics. 4.An, W., & Wu, G. (2024). Hybrid spatial-channel attention mechanism for cross-age face recognition. Electronics, 13(7), 1257. 5.Li, L., Wu, G., & Ying, Z. (2024, January). A Citation Count Prediction Model Based on Bi-LSTM and Transformer. In 2024 2nd International Conference on Big Data and Privacy Computing (BDPC) (pp. 21-27). IEEE.
5	Macau Science and Technology Development Fund "Technological Innovation Enhancement Plan"	Utilizing preemptive multitasking to improve resource scheduling efficiency of deep learning systems (2023.12.11 –2026.01.11)	MOP $451,000.00	Assistant Professor Wu Xiaofeng	Wu, X., Bojkovic, V., Gu, B., Suo, K., & Zou, K. (2024). FTBC: Forward Temporal Bias Correction for Optimizing ANN-SNN Conversion. In Proceedings of The 18th European Conference on Computer Vision, ECCV 2024.
6	Zhuhai Orbit Aerospace	City University of Macau and	RMB ¥200,000.00	Assistant Professor	1. Q. Zhou, Y. Guo, et al. Progressive Multiscale Attention Network for Diabetic Retinopathy. International Conference on Algorithms and

	Technology Co., Ltd.	Zhuhai Orbit Aerospace Technology Co., Ltd. jointly established the "Joint Laboratory of Spatiotemporal Big Data and Artificial Intelligence"		Kuok Weng Tak	Architectures for Parallel Processing (ICA3PP), 2024, Accepted. EI(CCF C) 2. J. Run, Y. Guo, J. Yan, et al. AW-YOLOv9: Adverse Weather Conditions Adaptation for UAV Detection. International Conference on Algorithms and Architectures for Parallel Processing (ICA3PP), 2024, Accepted. EI(CCF C) 3. Z. Zhang, Y. Guo, et al. Diabetic Foot Monitoring Based on A Lightweight Model. Cross Strait Radio Science and Wireless Technology Conference(CSRSWTC)，2024, Accepted. EI 4. H. Jia, Y. Guo. Remote Sensing Change Detection Based on Multi-scale Spatio-temporal Perceptual Attention Network. Cross Strait Radio Science and Wireless Technology Conference(CSRSWTC)，2024, Accepted. EI 5. Y. Weng, Y. Guo. Remote Scene Image Classification Based on Vision-LSTM Model. Cross Strait Radio Science and Wireless Technology Conference(CSRSWTC)，2024, Accepted. EI 6. Y. Lin, Y. Guo. A Progressive Training Framework for Image Super-Resolution. Cross Strait Radio Science and Wireless Technology Conference(CSRSWTC)，2024, Accepted. EI 7. Guo Y, Gong C, Yan J. Activated Sparsely Sub-Pixel Transformer for Remote Sensing Image Super-Resolution. Remote Sensing, 2024, 16(11): 1895. SCI(Q1) 8. 郭永德.基于遥感影像的中国宏观经济与生态环境协调发展研究.重庆出版社, 2023 9. 郭永德.基于多源数据驱动的商住建筑碳排放关联预测与优化研究. 华中科技大学出版社, 2023
7	Macau Science and Technology Development Fund	Research and development of key technologies for digestive	MOP $1,720,400.00	Prof. Gu Jia	The project was just launched in November, and 2 SCI papers have been submitted: 1. Double kernel and minimum variance embedded broad learning system based

		endoscopy positioning and map construction systems (2024.9.24-2027.10.30)			autoencoder for one-class classification；NeuroComputing 2. Towards Simplified Graph Neural Networks for Identifying Cancer Driver Genes in Heterophilic Networks；APPLIED SOFT COMPUTING。
8	Macau Science and Technology Development Fund	Research on key technologies for intelligent interaction in digital twin cultural tourism experience (2024.9.24-2027.10.30)	MOP $2,087,580.00	Prof. Sun Xin	2 papers have been published: 1. Yuting Yang, Xin Sun, Junyu Dong, Kin-Man Lam, Xiao Xiang Zhu, Attention-ConvNet Network for Ocean Front Prediction via Remote Sensing SST Images, IEEE Transactions on Geoscience and Remote Sensing, Accepted, https://ieeexplore.ieee.org/abstract/document/10750822 2. Li Qian, Jing Qian, Xin Sun, Wengang Guo, and Christian Böhm, ADOD: Adaptive Density Outlier Detection. IEEE International Conference on Data Mining (ICDM) 2024. Talent cultivation: Currently, the project has 2 doctoral students and 4 master students. Under the leadership of the project leader and other participating teachers, the students have clear division of labor and the project is progressing in an orderly manner.

Publishing

Table 9. Summary of publication status

	Q1	Q2-Q4	EI	Monograph	CSSCI Core Journals	General Journals	ESCI	SCI Indexed	Total
2022	41	21	14	1	1	-	2	62	80
2023	52	12	19	5	-	2	1	64	91
2024	130	34	85	1	6	6	6	164	268

In 2024, the faculty published a total of 265 papers. Among them, 176 papers were included in SCI

and 138 were listed in JCR Q1 journals. Internationally renowned journals such as IEEE Transactions on Information Forensics and Security (network security topics), IEEE transactions on Computers (data engineering topics), and ACM Computing Surveys (computing survey topics) were published. These topics are consistent with the research directions of our teachers and the future development of the faculty.

Key publications and their impact

In this year, the research achievements of FDS have been substantial, covering multiple fields such as artificial intelligence, information security, and data science. In artificial intelligence, we explored the issue of machine unlearning in federated learning and developed an efficient model fine-tuning method to protect data privacy and optimize model performance. In information security, we proposed new privacy-preserving algorithms for federated learning, among others. In data science, we introduced wearable device algorithms based on fuzzy algorithms and proposed convolutional neural networks based on attention mechanisms for analyzing remote sensing SST images to predict ocean fronts, which are significant for marine resource management and environmental protection. These achievements demonstrate the research strength of the faculty in the fields of data science and artificial intelligence, providing a solid scientific foundation for future technological advancements and practical applications.

- **Artificial Intelligence**

  Huiqiang Chen, Tianqing Zhu, Bo Liu, Wanlei Zhou, S Yu Philip (2024). Fine-tuning a Biased Model for Improving Fairness. IEEE Transactions on Big Data.
  This study explores how to improve the fairness of biased machine learning models through fine-tuning. The researchers proposed a new method that identifies and reduces biases in the model's decision-making process to ensure fair treatment of different groups. Experimental results indicate that this method effectively reduces the model's biases and enhances its performance across various data subsets, providing a new solution for achieving fairness in artificial intelligence.

  Heng Xu, Tianqing Zhu, Lefeng Zhang, Wanlei Zh
  Federated Machine Unlearning Based on Model Ex
  This study presents an efficient machine unlearning scheme in federated learning, aimed at addressing the challenge of removing the influence of specific training samples from the global model while ensuring compliance with privacy regulations. By utilizing artificial intelligence model interpretability techniques, the method identifies and fine-tunes only the most critical channels in the trained model related to the deleted categories. This approach avoids accessing the training data, reduces computational and communication costs, and maintains model performance.

- **Information Security**

Cai, J., Ye, Q., Hu, H., Liu, X., & Fu, Y. (2024). Boosting Accuracy of Differentially Private Continuous Data Release for Federated Learning. IEEE Transactions on Information Forensics and Security.

This study aims to enhance the accuracy of continuous data publishing under differential privacy protection in federated learning. By optimizing the differential privacy mechanism, the researchers reduced information loss during the data publishing process while ensuring user privacy security. The proposed algorithm improves the accuracy of model training while protecting data privacy, which is significant for achieving a balance between privacy protection and data sharing.

Shuai Zhou, Tianqing Zhu, Dayong Ye, Wanlei Zhou, Wei Zhao (2024). Inversion-guided Defense: Detecting Model Stealing Attacks by Output Inverting. IEEE Transactions on Information Forensics and Security.

This paper presents a new method called "Reverse Guidance Defense" for detecting model theft attacks. This method monitors the model's output using output reversal techniques to identify potential model theft behavior. The research found that abnormal output patterns generated by attackers during the model theft process can be effectively detected, thereby protecting the model from malicious replication. This work provides a new perspective on the security protection of machine learning models.

- **Data Science**

L. Xing, X. Li, W. Liu and X. Wang, "A Fuzzy-Operated Convolutional Autoencoder for Classification of Wearable Device-Collected Electrocardiogram," in IEEE Transactions on Fuzzy Systems, doi: 10.1109/TFUZZ.2024.3388023.

This study proposes a fuzzy operational convolutional autoencoder for classifying electrocardiogram (ECG) data collected from wearable devices. The model combines deep learning with fuzzy logic, extracting features through the autoencoder and using a fuzzy system for classification decisions. This approach enhances the accuracy and robustness of ECG signal classification, offering potential clinical application value for the detection of arrhythmias.

Yuting Yang, Xin Sun, Junyu Dong, Kin-Man Lam, Xiao Xiang Zhu, Attention-ConvNet Network for Ocean Front Prediction via Remote Sensing SST Images, IEEE Transactions on Geoscience and Remote Sensing, 2024.

This study addresses the complexity of ocean front prediction by proposing a temporal-sensitive network called Attention-ConvNet. This network effectively integrates spatiotemporal information and captures the dynamic changes of ocean fronts through a hierarchical attention mechanism and a complex hierarchical branching convolutional network architecture. The performance in ocean front prediction is significantly improved compared to traditional methods, which holds important implications for fisheries and navigational safety.

Joint Laboratory Construction Status

Table 10. Summary of Joint Laboratory Construction status

Laboratory Name	Partner Companies	Establishment	Research Areas
Joint Laboratory of Spatiotemporal Big Data and Artificial Intelligence	Zhuhai Orbita Aerospace Technology Co., Ltd.	2022	Artificial Intelligence
Local Root and Blockchain Lab	Shenzhen Peng Cheng Laboratory	2022	Cross-border data governance, research on DNS domain name resolution services between Mainland China and Macau
Industrial and Smart Manufacturing Laboratory	Gree Electric Appliances	2022	Smart Manufacturing
Smart Medical Joint Laboratory	Shandong First Medical University	2022	Application of artificial intelligence in medical scenarios
Business Intelligence Lab	Numbers tell stories	2022	Business Intelligence Analysis, Big Data Analysis
Cross-domain Data and Intelligent Collaboration Laboratory	National Engineering Laboratory for Big Data Distribution and Exchange Technologies	2022	Cross-border data governance, data security
Data Security Intelligent Protection Joint Laboratory	Zhiwang Anyun (Wuhan) Information Technology Co., Ltd	2022	Research on data security and privacy protection algorithms
Kangmingke Joint Laboratory	Shenzhen Kangming Technology Co., Ltd.	2022	Computer applications, blockchain application research
Pengcheng Bowei Macau Shooting Range-City University of Macau Network Security Testing Base	Boardware Information System Limited	2022	Network security, network attack and defense sandbox, security testing
Guangdong-Macau Joint Laboratory for Intelligent Computing and Analysis of Medical Images	Shenzhen Institute of Advanced Technology，Chinese Academy of Sciences	2024	Artificial Intelligence
Green Trusted Intelligent Computing Joint Laboratory	Beijing Chipu Network Technology Co., Ltd	2024	Artificial Intelligence and Trusted Computing

Medical Artificial Intelligence Industry-Academic-Research Joint Laboratory	Macau Baifutang Company Limited	2024	Artificial Intelligence
City University of Macau-Zhejiang Tsinghua Yangtze River Delta Research Institute Joint Laboratory	Zhejiang Tsinghua Yangtze River Delta Research Institute	2024	Research on privacy and security algorithms for artificial intelligence
Youfu Hospital Digital Joint Laboratory	Guangdong Provincial First Veterans Hospital	2024	Application of artificial intelligence in medical scenarios, smart elderly care and rehabilitation fields
Trusted Storage and AI Joint Laboratory	Quantum Core Cloud (Beijing) Microelectronics Technology Co., Ltd.	2024	Data security, intelligent storage
Cloud Campus Digital Education Joint Laboratory	AEMG Education Group	2024	Digital Education
Joint Laboratory of Computational Imaging and Multimodal Intelligent Vision	Suzhou Yishang Intelligent Technology Co., Ltd.	2024	Artificial Intelligence

Invited speeches, keynote addresses and conference participation

In 2024, the faculty actively organized a few activities and encouraged faculty and staff to actively participate. These activities not only promoted in-depth exchanges with other institutions and accelerated the cooperation process, but also provided a platform for the faculty to showcase the latest research results and unique insights to the outside world. Through these activities, faculty and staff can share their expertise and establish connections with their peers, thereby expanding academic networks and cooperation opportunities. In addition, these activities will help to enhance the faculty's visibility, attract more partners and resources, and further promote the improvement of academic research and education quality. The faculty's efforts have not only enhanced internal cohesion, but also strengthened connections with the external society, laying a solid foundation for future development.

1. **Participation in academic seminars**

Table 11. Participation in academic seminars

Ref	Conference/Event Name	Organizer	Date	Speakers
1	廣東省醫學會放射醫學分會年度會議(醫學人工智能新進展)	Guangdong Medical Association	2024/1/27	Jing Fengshi

2	Shenzhen University Internationalization Theme Month	Shenzhen University	2024/4/24	Zhu Tianqing, Liu Wenjian, Gu Jia
3	Hainan International College of Minzu University of China Special lectures	Faculty of Data Science	2024/4	Zhou Wanlei, Ying Zuobin, Duan Junwei
4	Hainan International College of Minzu University of China Special lectures	Faculty of Data Science	2024/5	Zhu Tianqing, Kuok Weng Tak, Sun Xin
5	Hainan International College of Minzu University of China Special lectures	Faculty of Data Science	2024/6/4	Liu Wenjian, Chu Chia-Wei, Gu Jia
6	2024 CCF China Blockchain Technology and Application Summit Forum	Chinese Computer Society (CCF)	2024/8/2-4	Zhou Wanlei
7	Xiangtan International Seminar	Xiangtan University	2024/8/8	Ying Zuobin
8	The 9th IEEE International Conference on Data Science Cyberspace	Chinese Information Processing Society	2024/8/23-26	Zhou Wanlei
9	2024 Local experts come to campus	Macau Science and Technology Association	2024/9/19	Liu Wenjian
10	2024 Scientific Research Project Finalization Exhibition and Academic Report	Macau Science and Technology Development Fund	2024/10/18	Zhou Wanlei
11	2024 GBA International Artificial Intelligence and Robotics Summit	Guangdong Artificial Intelligence Industry Association	2024/10/23	Zhou Wanlei
12	Seminar on the application of AI technology and federated learning in the marketing field	China Southern Airlines	2024/10/24-25	Cui Sanshuai
13	Xidian University Guangzhou Research Institute's "Integration of Science and Education, Industry, Research and Venture Capital" series of activities - High-end Talent Academic Report	Xidian University Guangzhou Research Institute	2024/10/26	Cai Jianping
14	The 12th Cyberspace Smart Search and Future Data Summit Forum	Chinese Information Processing Society of	2024/10/26-28	Zhou Wanlei

		China, Future Data Forum Steering Committee		
15	The First Nanning-ASEAN-Guangdong-Hong Kong-Macau Greater Bay Area Key Infectious Disease Surveillance Summit Forum	Nanning Municipal Health Commission/ Nanning Municipal Center for Disease Control and Prevention	2024/10/26-28	Liu Wenjian
16	The 24th International Conference on Algorithms and Architectures for Parallel Processing（ICA3PP 2024）	City University of Macau	2024/10/29-31	Conference Chairman: Zhou Wanlei Technical Programme Committee Chairman: Zhu Tianqing Local Chair: Liu Wenjian
17	2024 Cross Strait Radio Science and Wireless Technology Conference （CSRSWTC 2024）	City University of Macau, South China University of Technology and Anhui University of Technology	2024/11/5-7	Chairs: Zhou Wanlei, Liu Wenjian Co-Chairs: Zhu Tianqing Technical Programme Committee Chair: Sun Xin Technical Programme Committee Co-Chairs: Wu Gengshen Financial Chair: Ying Zuobin Local Organization Chairs: Kuok Weng Tak, Kong Hoi Io, Gao Wanxin
18	Guangdong Mental Health Association 2024 Academic Exchange Meeting and Youth Mental Health Forum	Guangdong Mental Health Association	2024/11/8-10	Liu Wenjian
19	Hainan International College of Minzu University of China Special lectures	Faculty of Data Science	2024/11/12-14	Kong Hoi Io, Liu Chi, Wang Chun, Sun Jing

Ref	Meeting Name	Organizer	Date	Participants
20	The 6th Pan-Beibu Gulf Biomedical Engineering Academic Exchange Conference	Chinese Society of Biomedical Engineering, Guangxi Medical University	2024/11/19-21	Liu Wenjian
21	Zhengzhou University Graduate Student Forum "Famous Teachers Forum" and the Second "Future Network Big Data Wisdom and Security Symposium"	Zhengzhou University	2024/11/22-23	Zhang Honggang
22	Hainan International College of Minzu University of China Special lectures	Faculty of Data Science	2024/12/16-18	Zhu Tianqing, Wong Chi Fong, Wu Gengshen, Cui Sanshuai
23	2024 Maritime Silk Road International Industry-Academia-Research-Application Cooperation Conference "Cyberspace Security and Digital Application Branch"	Fujian Normal University	2024/12/30	Ying Zuobin

2. Host academic seminars

Table 12. Hosted academic seminars

Ref	Meeting Name	Organizer	Date	Participants
1	2024 2nd International Conference on Big Data and Privacy Computing	City University of Macau	2024/1/10-12	Teachers & students
2	Seminar on New Developments in Data Decision-Making and Talent Cultivation in Macau's 1+4 Economy	City University of Macau	2024/4/25-26	Postgraduate
3	The 24th International Conference on Algorithms and Architectures for Parallel Processing	City University of Macau	2024/10/29-31	Society
4	2024 Cross Strait Radio Science and Wireless Technology Conference	City University of Macau, South China University of Technology, Anhui University of Technology	2024/11/4-7	Teachers & students

5	Artificial Intelligence Medical Technology Application Seminar and Opening Event of Cardiac Ultrasound Intelligent Navigation System Technology Exhibition	Faculty of Data Science, City University of Macau, City University of Macau and Macau Xiaocheng Digital Technology Joint Laboratory	2024/12/12	Teachers & students
6	Academic seminar on network security technology innovation and practical application	Inspur Cloud Information Technology Co., Ltd., Inspur Yunzhou Industrial Internet Co., Ltd., City University of Macau	2024/12/12	Teachers & students

3.   Invite experts to give lectures

Table 13. Expert Lectures

Ref	Category	Lecture topic	Date	Speaker
1	Academic lectures	Opportunities in Spatial Computing and UltraWideBand Technologies	2024/1/11	Dr. Mei-Chi Yang
2	Academic lectures	Pre-sessional course special lectures - cutting-edge topics in data science	2024/1/17	Jing Fengshi Assistant Professor
3	Academic lectures	Preparatory course special lecture - Blockchain technology principles and applications	2024/1/24	Zhu Jiawei Associate Professor
4	Academic lectures	Clustering Methods: Application of Machine Learning in Meteorological Research	2024/1/31	Dr. Wu Zhenpeng
5	Academic lectures	【Master Lecture】 "High-end Academic Lecture on Big Health and Artificial Intelligence"	2024/3/28	Academician Gao Fu, Academician Gao Wen, Academician Zheng Quanshui
6	Academic lectures	The application of deep learning in microscale magnetic resonance imaging	2024/3/28	Dr. Shi Diwei, Dr. Chen Li
7	Academic lectures	An Enabling Adaptive Process Modeling Framework with Delayed Process Output Measurement	2024/4/8	Prof. Sheng Chen

8	Academic lectures	Undergraduate Value Chain Management Classroom - Hospitality Industry Sharing Lecture	2024/4/9	Ms. Tracy Lou
9	Academic lectures	How to create your own large model	2024/4/12	Dr. Wenhan Chang, Dr. Hanjin Tong
10	Academic lectures	Some Personal Perspectives and Experiences on Trustworthy AI	2024/4/18	Prof. Zhang Yu
11	Academic lectures	Byzantine Fault Tolerance in the Age of Blockchains	2024/5/21	Prof. Zhang Haibin
12	Academic lectures	Aligning Language Agents' Behaviours with Human Moral Norms	2024/5/31	Prof. Ling Chen
13	Academic lectures	Talk about how to do research and write papers	2024/9/3	Academician Shen Xuemin
14	Academic lectures	【Master's Lecture】Enjoyable Learning and Teaching	2024/9/6	Academician Zheng Quanshui
15	Academic lectures	A Data Science Perspective During a Pandemic	2024/9/20	Prof. Zhang Qingpeng
16	Academic lectures	Lecture by doctor of philosophy's Supervisor of Faculty of Data Science	2024/9/27	Prof. Zhu Tianqing, Prof. Gu Jia, Prof. Sun Xin
17	Academic lectures	Undergraduate Economics Classroom -Live broadcast of lectures on contributions to the economy	2024/10/3	Ms. Xu Qibei , anchor Liana
18	Academic lectures	【Master Lecture】Fangban Seminar Hall: The concrete practice of Feynman learning method	2024/10/9	Academician Fang Binxing
19	Academic lectures	A New Algorithm for Machine Learning and Artificial Intelligence	2024/10/23	Prof. Xia Zhihong
20	Academic lectures	Discrete Hadamard Transform and its Variants: Theories, Fast Algorithms, and Applications	2024/10/30	Prof. Susanto Rahardja
21	Academic lectures	New challenges for information security in the era of artificial intelligence	2024/11/1	Academician Zheng Weimin, Prof. Ma Zhuo

22	Academic lectures	When Deep Learning Meets Computer Vision Challenges, Solutions and Trends	2024/11/20	Prof. Han Jungong
23	Academic lectures	Cloud Computing Security Past, Present and Future	2024/11/21	Prof. Willy Susilo
24	Academic lectures	Empowering finance with technology	2024/11/27	Mr. Chen Zhuohua, Mr. Miao Chengyu
25	Academic lectures	How Employee Activity will improve staff engagement within a company	2024/12/2	Mr. Wong Ka Son
26	Academic lectures	Autonomous machine learning for decision support in complex environments	2024/12/3	Prof. Lu Jie

Teacher Development and Achievement

Academic recruitment and promotion

Table 14. Academic Staff Recruitment Plan

	Professor	Associate Professor	Assistant Professor	Lecturer
Year23/24 Semester 2	2	1	4	-
Year 24/25 Semester 1	1	-	11	-
Year 24/25 Semester 2	-	-	5	-
Sub-Total	3	1	20	-
Total number of new teaching staff	**24**			

In 2024, we have successfully recruited 24 new employees, including 3 professors, 1 associate professor, and 20 assistant professors. Their research areas cover AI, network security, data analysis, bioinformatics, etc. All full-time academic staff have doctoral degrees and overseas study experience.

Recruitment strategy and promotion

A. Overseas recruitment visits

Based on the successful visits to Australia, Singapore and other countries and regions last year, the Faculty of Data Science continues to introduce more potential talents into the faculty's recruitment system through face-to-face preliminary exchanges.

B. Through the recommendation of partner universities

The faculty actively establishes cooperative relations with well-known universities and research institutions at home and abroad, and expands talent recruitment channels through joint training,

exchange visits and other forms to ensure that it can attract top academic talents in various fields.

C. Attract talents through project exchanges or academic conferences

i. The faculty actively participates in academic conferences and seminars at home and abroad, which enhances the international reputation and influence of the faculty, thereby attracting more outstanding academic talents.

ii. Encourage faculty and researchers to participate in various research projects and exchange activities, which not only improves research standards and results, but also brings more talent resources to the faculty.

D. Attract talents through the faculty's internal talent optimization system

i. The faculty provides systematic training and career development planning for teachers to help them continuously improve their professional ability and academic level.

ii. Establish an efficient team cooperation mechanism to improve the efficiency of cooperation and scientific research results among teachers.

iii. Provide a broad international platform and exchange opportunities, encourage faculty and researchers to participate in international academic cooperation, and enhance the academic vitality and global vision of the faculty.

Leadership roles and contributions in professional organizations

The Faculty of Data Science encourages its members to actively participate in various professional organizations and take on important positions. This will not only help cultivate members' leadership skills and enhance their influence in academia and the industry, but also enable them to make positive contributions to society by sharing professional knowledge and experience, promote cross-disciplinary cooperation, and drive the development of new technologies and innovations. Moreover, Professor Zhou Wanlei, Vice Rector of the University of Macau and Dean of the Faculty of Data Science, has been recognized for his contributions to cybersecurity and privacy protection. In November 2024, he was elected as an IEEE Fellow. He has also been selected for several consecutive years in the "Lifetime Scientific Impact List" of the "Top 2% of Global Scientists" published by Stanford University and Elsevier.

Table 15. Jobs in professional organizations

Name of Society/Organization	Position	Academic Staff
Institute of Electrical and Electronic Engineers (IEEE)	Fellow	Professor Zhou Wanlei
Macau Association for Promotion of Science and Technology	Vice President	
Macau Science and Technology Committee	Member	
China Institute of Communications	Artificial Intelligence Technology and Application Committee	Professor Zhang Honggang

	Vice Director, Member	
China Institute of Communications	Journal and Publishing Committee Vice Director, Member	
China Institute of Communications, IEEE	China Communications Vice Editor（Associate Editor-in-Chief）	
ERC：European Research Council	Starting Grant PanelMember	
College of Information Science and Electronic Engineering	Adjunct Professor	
Macau Association for Promotion of Science and Technology	Director	Associate Professor Liu Wenjian
Macau Association for the Promotion of Higher Education	Director	
Guangdong Provincial Association for Science and Technology	Special Invited Members from Hong Kong and Macau	
The delegation of Chengdu Chinese Overseas Friendship Association	Director	
Association of Cultural and Educational Interchange, Macau	Vice Chairman and Secretary General	
Smart City Alliance Association of Macau	Supervisor	
Macau Science and Technology Innovation Education Association	Vice President	
Key Laboratory for Cantonese Corpus Construction and Large Model Evaluation	Academic Committee	
Yunnan Key Laboratory of Software Engineering	Member, Distinguished Professor	
IEEE Macau Council	Member Development Committee Chairman and Director	Associate Professor Ying Zuobin
IEEE / CCF	Member	
China Society for Industrial and Applied Mathematics	Member	
Guangdong Science and Technology Enterprise Incubator Association	Guangdong Province Entrepreneurship Mentor	
Macau Bay Area Digital Economy Association	Vice President	Assistant Professor Kuok Weng Tak
Center of Physics Olympiad of Macau	Vice Chairman	Assistant Professor Kong Hoi Io

Strategic planning and future direction

Vision and Mission Statement

The Faculty of Data Science is committed to building a high-level data science research and education platform that is leading in Macau and the core of the Greater Bay Area. By exploring cutting-edge technologies to promote interdisciplinary cooperation and the cultivation of innovative talents, the faculty aims to promote the extensive application of data science in scientific research, industry and social services, and provide strong talent support, educational resources and intellectual support for the sustainable development and digital transformation of the Greater Bay Area. The faculty will work closely with all sectors to promote knowledge innovation and technological application in the field of data science, uphold the glorious tradition of patriotism and love for Macau of the City University of Macau, tell Chinese stories well, and promote Chinese culture. With the mission of "taking root in Macau and integrating into the Bay Area", the university integrates into the overall national development and contributes to the cultivation of talents in the Greater Bay Area and even the country.

Goals and objectives for the next few years

In order to realize our vision, we have the following goals in the next 3-5 years:
- To enter the software science professional rankings in 2027;
- Establish key laboratories led by the faculty of Data Science at the provincial or higher level; obtain approval for the Computer Engineering program (Bachelor's, Master's, and Doctorate) and the Artificial Intelligence program (Bachelor's, Master's, and Doctorate);
- Empower more universities in Australia to establish joint programs;
- Collaborate with more universities in mainland China to create joint educational projects;
- Increase the number of students to 2,000 within three years, achieving a student-to-teacher ratio of 18:1.

Challenges and Opportunities

In the process of pursuing its goals, the Faculty of Data Science faces both challenges and opportunities. In order to realize the development vision of the faculty, we will actively respond to these challenges and seize opportunities to promote the continuous progress of the faculty.

Challenges:

I. Interdisciplinary cooperation and communication

The wide application of data science requires close cooperation with other disciplines, faculties and fields. However, there may be differences in the knowledge system, research methods and language between different disciplines. How to communicate effectively and establish an efficient interdisciplinary cooperation mechanism is an important challenge facing the faculty. The faculty needs to strengthen interdisciplinary dialogue and exchanges, integrate the advantages of all parties, and promote collaborative innovation.

II. Technology update and iteration

The technology and tools in the field of data science are changing with each passing day, requiring teachers and students to constantly maintain their enthusiasm for learning and the motivation to make progress in order to keep up with the pace of technological development. At the same time, the faculty needs to flexibly adjust the program settings to ensure that the teaching content keeps up with industry needs and technological advances, thereby improving the quality of education and enhancing the employment competitiveness of graduates.

III. Attracting outstanding talents

Attracting the world's top research talents has been a long-term goal of the faculty. As international competition becomes increasingly fierce, how to attract and retain top scientific research talents on a global scale has become a major challenge for the development of the faculty. To this end, the faculty will further optimize the allocation of scientific research resources, provide a good academic environment and support system, help newly introduced outstanding talents smoothly integrate into the faculty culture, and provide them with sufficient research support and development opportunities.

Opportunities:

IV. Rapid development of City University of Macau

In recent years, City University of Macau has ushered in a historical opportunity of rapid development. With the improvement of the international environment and the continuous accumulation of scientific and technological resources, the faculty's conditions for running facilities have been significantly improved. The Faculty of Data Science could take advantage of this environment to further enhance its strength in education, scientific research, and talent training. Greater educational investment and social support provide a solid foundation for the faculty's continued development.

V. Rapid development of artificial intelligence and big data

With the rapid development of artificial intelligence and big data technology, the tools and algorithms of data science are becoming increasingly powerful, greatly promoting the efficiency of data processing and analysis. This provides the Faculty of Data Science with new research directions and application scenarios and brings opportunities for innovation. The faculty can take this opportunity to strengthen cooperation in industry and academia and occupy a more advantageous position in the integration of industry, academia and research.

VI. The surge in social demand for data science

With the acceleration of digital transformation, the demand for data science in all walks of life has grown rapidly. Whether in scientific research, industry or social service, there is an urgent need for high-quality data science talents with professional knowledge and skills. The Faculty of Data Science can not only cultivate many outstanding graduates for the society, but also expand the employment market and development space through close cooperation with industry.

Conclusion

In the past year, the faculty has successfully held many academic and social activities, which promoted academic exchanges and team building within the faculty. At the same time, the faculty has established strategic cooperative relationships with many domestic and foreign partners, promoted the sharing of academic resources and research results, and further enhanced the comprehensive competitiveness of the faculty. In addition, the faculty has also absorbed new members to join, providing more diversified perspectives and strengths for future development.

These achievements are inseparable from the hard work and collective efforts of all faculty and staff. In the past 12 months, teachers and researchers have ensured the steady development and scientific research innovation of the faculty through close collaboration and joint efforts, and the team cohesion and execution have been unprecedentedly improved.

Looking ahead to 2025, the Faculty of Data Science will continue to work hard in the new development stage, relying on deepening academic cooperation and cutting-edge scientific research to push the faculty towards the goal of "Greater Bay Area Data Science Research and Education Center". In the next few years, the faculty will strive to become a leading digital science education and research platform in the world with higher standards and a broader vision and provide stronger intellectual support and talent guarantee for regional and global scientific and technological innovation and digital transformation.

Appendix

Faculty of Data Science papers and monographs published in 2024

1. A deep learning approach: nose features as a method of dog verification and identification，Jia Gu，International Journal of Innovative Computing, Information and Control（preprint）

2. Ai, C., Li, X., Ma, K., Zhang, B., & Huang, H. (2024). Snow chemical characteristics and meteorological controlling factors from three snowfalls of Gande in the Tibetan plateau. Atmospheric Pollution Research, 15(6), 102119.

3. An W, Wu G.* Hybrid Spatial-Channel Attention Mechanism for Cross-Age Face Recognition. Electronics. 2024; 13(7):1257.

4. Bai, H., & Wei, C.-L. (2024, Nov). MT-SAL: Multi-task Structure-aware Learning for Legal Document Summarization. CSRSWTC 2024. Proceedings of the 2024 Cross Strait Radio Science and Wireless Technology Conference (pp. 517-519). Macao SAR, China.

5. Baoping Liu, Bo Liu, Ming Ding, Tianqing Zhu(2024). Detection of diffusion model-generated faces by assessing smoothness and noise tolerance. 2024 IEEE International Symposium on Broadband Multimedia Systems and Broadcasting (BMSB).

6. Baoping Liu, Bo Liu, Ming Ding, Tianqing Zhu(2024). MeST-Former: Motion-enhanced Spatiotemporal Transformer for generalizable Deepfake detection. Neurocomputing 610, 128588.

7. C2AM-Unet: Coordinate and Channel Attention Mixing Flexible Architecture for Retinal Vessel Segmentation，Jingling Zhang, Shuting Zheng, Wen Zhang and Jia Gu, ，Medical Image Analysis（preprint）

8. Cai, H., Liu, W., Chu, C., (2024). A Synergetic Evaluation Calculation Scheme for Negotiation Process with SERVQUAL Model Based on AHP-FCE, 2024 International Conference on Telecommunication, Electronics and Informatics (ICTEI 2024)

9. Cai, J., Ye, Q., Hu, H., Liu, X., & Fu, Y. (2024). Boosting Accuracy of Differentially Private Continuous Data Release for Federated Learning. IEEE Transactions on Information Forensics and Security.

10. Cai, R., Chen, L.*, Zhu, Y. (2024). Privacy-Preserving Access Control Model for E-Medical Systems. 2024 2nd International Conference on Big Data and Privacy Computing (BDPC), Macau, China, 2024, pp. 63-68, doi: 10.1109/BDPC59998.2024.10649051.

11. Cao, X., Yang, Z., Ning, J., Jin, C., Lu, R., Liu, Z., & Zhou, J. (2024). Dynamic Group Time-based One-time Passwords. IEEE Transactions on Information Forensics and Security, vol. 19, 2024.

12. Chen X.; Wu C.; Shen Y.; Ji Y.; Yoshinaga T.; Ni Q.; Zarakovitis C. C.; Zhang H. (2024). Communication and Control Co-Design in 6G: Sequential Decision-Making with LLMs. IEEE Network. (accepted in 12/2024, in press)

13. Chen, F., Guo, T., Wei, C.-L., & Chu, C. (2024, Nov), Investigating Researcher Mobility Through Geographic Information Systems (GIS). CSRSWTC 2024. Proceedings of the 2024 Cross Strait Radio Science and Wireless Technology Conference (pp. 529-531). Macao SAR, China.

14. Chen, H., Liu, C., Zhu, T., & Zhou, W. (2024). When deep learning meets watermarking: A survey of application, attacks and defenses. Computer Standards & Interfaces, 89, 103830.

15. Chen, H., Zhu, T., Liu, C., Yu, S., & Zhou, W. (2024). High-frequency matters: Attack and defense for image-processing model watermarking. IEEE Transactions on Services Computing.

16. Chen, H., Zhu, T., Liu, C., Yu, S., & Zhou, W. (2024). High-frequency matters: Attack and defense for image-processing model watermarking. IEEE Transactions on Services Computing, 17(4), 1565–1579.

17. Chen, S., Wang, W., Zhong, Y., Ying, Z., Tang, W., & Pan, Z. (2024). HP-MIA: A novel membership inference attack scheme for high membership prediction precision. Computers & Security, 136, 103571.

18. Chen, X., Jiang, N., Li, Y., Cheng, G., Liang, Z., Ying, Z., ... & Zhao, R. (2024). Efficient Decoder and Intermediate Domain for Semantic Segmentation in Adverse Conditions. Smart Cities, 7(1), 254-276.

19. Chen, Z., Yao, Z., Jin, B., Lin, M., & Ning, J. (2024). FIBNet: privacy-Enhancing approach for face biometrics based on the information bottleneck principle. IEEE Transactions on Information Forensics and Security.

20. Cheng, L., Xiong, J., Duan, J., Zhang, Y., Chen, C., Zhong, J., ... & Quan, Y. (2024). SaE-GBLS: an effective self-adaptive evolutionary optimized graph-broad model for EEG-based automatic epileptic seizure detection. Frontiers in Computational Neuroscience, 18, 1379368.

21. Chenhao Xu, Jiaqi Ge, Yao Deng, Longxiang Gao, Mengshi Zhang, Yong Li, Wanlei Zhou, Xi Zheng(2024). BASS: A Blockchain-Based Asynchronous SignSGD Architecture for Efficient and Secure. IEEE Transactions on Dependable and Secure Computing. Federated Learning.

22. Chi Liu, Tianqing Zhu, Yuan Zhao, Jun Zhang, Wanlei Zhou(2024). Disentangling different levels of GAN fingerprints for task-specific forensics. Computer Standards & Interfaces 89, 103825.

23. Chou, O. H. I., Ning, J., Chan, R. N. C., Chung, C. T., Huang, H., Ng, K., ... & Zhou, J. (2024). Lower Risks of New-Onset Hepatocellular Carcinoma in Patients With Type 2 Diabetes Mellitus Treated With SGLT2 Inhibitors Versus DPP4 Inhibitors. Journal of the National Comprehensive Cancer Network, 22(2D).

24. Chu Ai, Xiaofei Li, KeKe Ma, Bo Zhang, Huayu Huang (2024). Snow chemical characteristics and meteorological controlling factors from three snowfalls of Gande in the Tibetan plateau, Atmospheric Pollution Research,15, 6, （2024 年 3 月 29 日）

25. Contrasting Long-Term Trends in Near-Surface and Subsurface Indo-Pacific Warm Pool Volume Seasonality

26. Dayong Ye, Tianqing Zhu, Kun Gao, Wanlei Zhou(2024). Defending against Label-only Attacks via Meta-Reinforcement Learning. IEEE Transactions on Information Forensics and Security.

27. Deng L., Zhong Q.*, Lei H., Qiu Y. and Chen J.. GPT-based WebAssembly Instruction Analysis for Program Language Processing. Accepted by EISA2024. (Accepted)

28. Deng, Y., & Ma, Y. (2024, January). Research on the Evaluation Index System of Postgraduate Deep Learning Based on AHP. In 2024 2nd International Conference on Big Data and Privacy Computing (BDPC) (pp. 6-10). IEEE.

29. Dhar, N., Deng, B., Lo, D., Wu, X., Zhao, L., & Suo, K. (2024, April). An empirical analysis and resource footprint study of deploying large language models on edge devices. In Proceedings of the 2024 ACM Southeast Conference (pp. 69-76).

30. Ding, Hui, Guokun Cui, & Minghe Xv. The 5th International Conference on Advanced Intelligent Technologies (ICAIT2024) November 22-24, 2024, Sanya, China. Can Tiny Tell Stories Well? Exploiting Tiny-LLMs Performance in Writing.

31. Dong, Z., Zhang, Q*.Safety Helmet Detection: Adding Attention Mechanism to Yolov8 to Improve Detection Accuracy. ICAIBD 2024 (Accepted)

32. Du, F., Zhao, L., Luo, H., Xing, Q., Wu, J., Zhu, Y., ... & Wu, J. (2024). Recognition of eye diseases based on deep neural networks for transfer learning and improved DS evidence theory. BMC Medical Imaging, 24(1), 19.

33. Du, X., Zhang, Q.*, Zhu, J., & Liu, X. (2024). Adaptive unified defense framework for tackling adversarial audio attacks. Artificial Intelligence Review, 57(8), 218.

34. Duan, J., Xiong, J., Li, Y., & Ding, W. (2024). Deep learning based multimodal biomedical data fusion: An overview and comparative review. Information Fusion, 102536.

35. Duan, J., Zeng, L., Wu, Y., Chen, L., & Chen, C. P. (2024). BroadNet: A novel broad learning system based series AC arc fault detection approach with zero phase component analysis whitening transformation. IEEE Sensors Journal.

36. Duan, Z., Wang, C., & Zhong, W. (2024). SSGCL: Simple Social Recommendation with Graph Contrastive Learning. Mathematics, 12(7), 1107.

37. Enhancing Text-Image Person Re-identification via Intra-Class Relevance Learning, Wenbin He, Yutong Gao, Wenjian Liu, Chaomurilige Wang, Zheng Liu and Ao Guo ICA3PP

38. Fang Senlin, Liu Yi Wen, Liu Chengliang, Wang Jingnan, Su Yuanzhe, Zhang Yupo, Kong Hoiio, Yi Zhengkun, Wu Xinyu (2024). Probabilistic Spiking Neural Network for Robotic Tactile Continual Learning. 2024 IEEE International Conference on Robotics and Automation (ICRA). IEEE.

39. Fang, S, et al. (2024). Evetac Meets Sparse Probabilistic Spiking Neural Network: Enhancing Snap-Fit Recognition Efficiency and Performance. IEEE Robotics and Automation Letters (RAL).

40. Fang, S., Wu, G.*, Liu, Y., Feng, X., & Kong, Y., (2024). Dual Enhanced Semantic Hashing For Fast Image Retrieval. Multimedia Tools and Applications, Springer Nature.

41. Faqian Guan, Tianqing Zhu, Hanjin Tong, Wanlei Zhou(2024). Topology modification against membership inference attack in Graph Neural Networks. Knowledge-Based Systems 305, 112642.

42. Faqian Guan, Tianqing Zhu, Hanjin Tong, Wanlei Zhou, A realistic model extraction attack against graph neural networks, Knowledge-Based Systems, 2024, ISSN 0950-7051, https://doi.org/10.1016/j.knosys.2024.112144.

43. Faqian Guan, Tianqing Zhu, Hui Sun, Wanlei Zhou, S Yu Philip(2024). Large Language Models for Link Stealing Attacks Against Graph Neural Networks. IEEE Transactions on Big Data.

44. Faqian Guan, Tianqing Zhu, Wanlei Zhou, Kim-Kwang Raymond Choo(2024). Graph neural networks: a survey on the links between privacy and security. Artificial Intelligence Review 57 (2), 40.

45. Feng Xia, Chen Wenhao (2024). A Survey on Privacy-Preserving Federated Learning Against Poisoning Attacks, Cluster Computing(Accept).

46. Feng, X., Cheng, W., Cao, C., Wang, L., & Sheng, V. S. (2024). DPFLA: Defending Private Federated Learning Against Poisoning Attacks. IEEE Transactions on Services Computing, doi: 10.1109/TSC.2024.3376255.

47. Feng, X., Cui, K., Wang, L., Liu, Z., & Ma, J. (2024). PBAG: A Privacy-Preserving Blockchain-Based Authentication Protocol With Global-Updated Commitment in IoVs. IEEE Transactions on Intelligent Transportation Systems, doi: 10.1109/TITS.2024.3399200.

48. Feng, X., Liu, H., Wang, L., Zhu, H., & Sheng, V. S. (2024). An Interpretable Model for Large-scale Smart Contract Vulnerability Detection. Blockchain: Research and Applications, 100209, doi:10.1016/j.bcra.2024.100209.

49. G. Xia, Y. Guo. A Novel Transformer-Based Approach to Low-Light Image Enhancement. IEEE International Conference on Electronic Technology, Communication and Information (ICETCI), 2024, 827-876.

50. Gao, Y., Ge, Y., Ning, J., Ma, J., & Chen, X. (2024). Verifiable Multi-Level Dynamic Searchable Encryption With Forward and Backward Privacy in Cloud-Assisted IoT. IEEE Internet of Things Journal.

51. Ge, D., Xie, H., Bai, L., & Yan, Y. (2024, July).Takagi-Sugeno Functional Fuzzy System for Function-on-Function Regression. In 2024 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE), (pp. 1-8). IEEE. （ DOI: 10.1109/FUZZ-IEEE60900.2024.10611822）

52. Gleb Beliakov, Longxiang Gao, Yong Xiang, Wanlei Zhou(2024). Multiobjective optimization by using cutting angle methods and hypervolume criterion. Optimization Methods and Software, 1-18.

53. Gou, J., Sun, L., Wu, J., Chu, C., Gao, Y., (2024). A Multi-Holder Role and Strange Attractor-based Data Possession Proof in Medical Clouds. Proceedings of the 24th International Conference on Algorithms and Architectures for Parallel Processing (ICA3PP), October 29-31, 2024, Macao SAR, China.

54. Guan, X., & Jiang, K*. (2024, February). Satisfaction Evaluation System of Macau Attractions Based on Online Evaluation Data. In Proceedings of the 2024 7th International Conference on Data Storage and Data Engineering (pp. 34-44).

55. Guangsheng Zhang, Bo Liu, Huan Tian, Tianqing Zhu, Ming Ding, Wanlei Zhou(2024). How Does a Deep Learning Model Architecture Impact Its Privacy? A Comprehensive Study of Privacy Attacks on {CNNs} and Transformers. 33rd USENIX Security Symposium (USENIX Security 24), 6795-6812.

56. Guangsheng Zhang, Bo Liu, Tianqing Zhu, Ming Ding, Wanlei Zhou(2024). PPFed: A Privacy-Preserving and Personalized Federated Learning Framework. IEEE Internet of Things Journal.

57. Guo, A., Liu, X., Liu, X., Hu, B., Yuan, J., Chu, C., (2024). Cross-Modal Mask and Detail Alignment for Text-based Person Retrieval. Proceedings of the 24th International Conference on Algorithms and Architectures for Parallel Processing (ICA3PP), October 29-31, 2024, Macao SAR, China.

58. Guo, Y., Gong, C., & Yan, J. (2024). Activated Sparsely Sub-Pixel Transformer for Remote Sensing Image Super-Resolution. Remote Sensing, 16(11), 1895.

59. H. Jia, Y. Guo. Remote Sensing Change Detection Based on Multi-scale Spatio-temporal Perceptual Attention Network.

60. Haiqiong, L., & Hoiio, K. (2024, July). ChatGPT Plagiarism in the Academic Field: Exploration and Analysis of Plagiarism Effects. In Machine Learning and Intelligent Computing (pp. 177-187). PMLR.

61. Hao, F., Wang, W., Hoiio, K.*, & Ma, D. (2024). Research on optimization and scheduling of MPTCP data networks in GNSS network reference stations. SMC2024, Volume(Issue), pages

62. Hao, F., Xia, J., Xu, H., Kong, H., Dong, X., & Bai, J. (2024). An Efficient Model for the Detection of Wood Surface Defects. Engineering Applications of Artificial Intelligence.

63. Hao, F., Zhang, Z., Ma, D., & Kong, H. (2024). GSBF-YOLO: a lightweight model for tomato ripeness detection in natural environments.

64. Hao, F., Zhao, X., Bian, C., Kong, H., Dong, X., & Bai, J. (2024). VEBiLSTM: A Neural Network for Field-road Classification using Enhanced Spatiotemporal Features. In International Conference on Neural Information Processing (pp). Cham: Springer International Publishing.

65. Hao, F., Zhu, S., Ma, D., Dong, X., Hoiio, K.*, Liu, X., & Mu, C. (2024). Rapid maize seedling detection based on receptive-field and cross-dimensional information interaction. SMC2024, Volume(Issue), pages.

66. He, N., Duan, J., & Lyu, J. (2025). Double kernel and minimum variance embedded broad learning system based autoencoder for one-class classification. Neurocomputing, 611, 128638.

67. He, Y., Yang, B., & Chu, C. (2024). BAST-MGCN: Integrating Background Attributes for Enhanced Spatio-temporal Prediction of Terrorist Attack Casualties. 2024 5th International Conference on Computer Vision, Image and Deep Learning (CVIDL), 510–516.   (2024-07-26) https://doi.org/10.1109/CVIDL62147.2024.10603616

68. He, Y., Yang, B., & Chu, C. (2024). GA-CatBoost-Weight Algorithm for Predicting Casualties in Terrorist Attacks: Addressing Data Imbalance and Enhancing Performance. Mathematics, 12(6), Article 6. (2024-03-11) https://doi.org/10.3390/math12060818

69. Heng Xu, Tianqing Zhu, Lefeng Zhang, Wanlei Zhou, S Yu Philip(2024). Update Selective Parameters: Federated Machine Unlearning Based on Model Explanation. IEEE Transactions on Big Data.

70. Hou, Z., Ning, J., Huang, X., Xu, S., & Zhang, L. Y. (2024). Blockchain-based efficient verifiable outsourced attribute-based encryption in cloud. Computer Standards & Interfaces, 90, 103854.

71. Hu, M., Chen, L.*, Chen, G., Mu, Y., Deng, R. H. (2024). A Pruned Pendant Vertex based Index for Shortest Distance Query under Structured Encrypted Graph. IEEE Transactions on Information Forensics and Security, 19: 6351-6363.

72. Hu, M., Xia, P., Wang, L., Yan, S., Tang, F., Xu, Z., Luo, Y., Song, K., Leitner, J., Cheng, X., & Others. (2024). OphNet: A large-scale video benchmark for ophthalmic surgical workflow understanding.

73. Hu, S., Jing, F., Fan, C., Dai, Y., Xie, Y., Zhou, Y., ... & Tang, W. (2024). Social network strategies to distribute HIV self-testing kits: a global systematic review and network meta-analysis. Journal of the International AIDS Society, 27(7), e26342.

74. Huajie Chen, Chi Liu, Tianqing Zhu, Wanlei Zhou(2024). When deep learning meets watermarking: A survey of application, attacks and defenses. Computer Standards & Interfaces, 103830.

75. Huajie Chen, Tianqing Zhu, Chi Liu, Shui Yu, Wanlei Zhou(2024). High-frequency matters: Attack and defense for image-processing model watermarking. IEEE Transactions on Services Computing.

76. Huan Tian, Bo Liu, Tianqing Zhu, Wanlei Zhou, S Yu Philip(2024). Distilling Fair Representations From Fair Teachers. IEEE Transactions on Big Data.

77. Huan Tian, Bo Liu, Tianqing Zhu, Wanlei Zhou, S Yu Philip(2024). MultiFair: Model Fairness With Multiple Sensitive Attributes. IEEE Transactions on Neural Networks and Learning Systems.

78. Huan Tian, Guangsheng Zhang, Bo Liu, Tianqing Zhu, Ming Ding, Wanlei Zhou(2024). When Fairness Meets Privacy: Exploring Privacy Threats in Fair Binary Classifiers via Membership Inference Attacks.

79. Huang, K., Xu, M., Guo, T., Chen, F., Wei, C.-L., & Chu, C (2024, Nov), Research on offshore ship trajectory prediction and accuracy optimization based on dual-layer LSTMTransformer model. CSRSWTC 2024. Proceedings of the 2024 Cross Strait Radio Science and Wireless Technology Conference (pp. 170-172). Macao SAR, China.

80. Hui Sun, Tianqing Zhu, Wenhan Chang, Wanlei Zhou(2024). A two-stage model extraction attack on GANs with a small collected dataset. Computers & Security 137, 103634.

81. Huiqiang Chen, Tianqing Zhu, Bo Liu, Wanlei Zhou, S Yu Philip(2024). Fine-tuning a Biased Model for Improving Fairness. IEEE Transactions on Big Data.

82. J. Run, Y. Guo, J. Yan, et al. AW-YOLOv9: Adverse Weather Conditions Adaptation for UAV Detection. International Conference on Algorithms and Architectures for Parallel Processing (ICA3PP), 2024, Accepted.

83. K. Zhou and D. Yu, "Segmentation of Brain MRI Tumors by MedSAM with Prompts Generated by Object Detection," 2024 5th International Seminar on Artificial Intelligence, Networking and Information Technology (AINIT), Nanjing, China, 2024, pp. 2081-2085, doi: 10.1109/AINIT61980.2024.10581523.

84. Ke, J., Zhang, Q., Wang, J., Ding, H., Zhang, P., & Wen, J. Graph-based Referring Expression Comprehension with Expression-guided Selective Filtering and Noun-Oriented Reasoning. Pattern Recognition. (Accepted)

85. Kong, X., Chen, L.*, Zhu, Y., Mu, Y. (2024). Efficient Public-key Searchable Encryption Scheme from PSI with Scalable Proxy Servers. IEEE Transactions on Services Computing, DOI: 10.1109/TSC.2024.3489432.

86. Kun Gao, Tianqing Zhu, Dayong Ye, Wanlei Zhou(2024). Defending against gradient inversion attacks in federated learning via statistical machine unlearning. Knowledge-Based Systems, 111983.

87. Kuok, K., Liu, X., Ye, J., Wang, Y., & Liu, W. (2024). GDE-Pose: A Real-Time Adaptive Compression and Multi-Scale Dynamic Feature Fusion Approach for Pose Estimation. Electronics, 13(23), 4837.

88. L. Xing, X. Li, W. Liu and X. Wang, "A Fuzzy-Operated Convolutional Autoencoder for Classification of Wearable Device-Collected Electrocardiogram," in IEEE Transactions on Fuzzy Systems, doi: 10.1109/TFUZZ.2024.3388023.

89. Lai X, Guo Y, Liu Y. Attenuation-Based Attention for Improved Novel View Synthesis. International Conference on Signal Processing, Sensors and Intelligent Systems (SPSIS), 2024.

90. Lefeng Zhang, Tianqing Zhu, Ping Xiong, and Wanlei Zhou. 2024. The Price of Unlearning: Identifying Unlearning Risk in Edge Computing. ACM Trans. Multimedia Comput. Commun. Appl. https://doi.org/10.1145/3662184 April 2024

91. Lei, C. F., & Ngan, H. F. B. (2024). What triggers customers' privacy protection behavior: The effect of surveillance cameras and data collection disclosure. Journal of Global Scholars of Marketing Science, 34(4), 513–533. https://doi.org/10.1080/21639159.2024.2341835

92. Leung, J. C. H., Gan, Q., Liu, S., Kong, H., & Zhang, B. (2024). Bootstrapping Image Histogram for Simplifying Climate Snapshots: Exploring the Application to Indo-Pacific Warm Pool Expansion Research (No. EGU24-6517). Copernicus Meetings.

93. Li N., Qi M., Wang Q. and Chen S., "Bitcoin Inscriptions: Foundations and Beyond (2024). " 2024 IEEE International Conference on Blockchain and Cryptocurrency (ICBC). pp. 1-5, doi: 10.1109/ICBC59979.2024

94. Li Q, Guo Y, Lai X. ELRFNet: Effective Large Receptive Field Based ConvNext for Medical Segmentation. International Conference on Network Engineering, Algorithms and Big Data (NEABD), 2024.

95. Li Qian, Jing Qian, Xin Sun, Wengang Guo, and Christian Böhm, ADOD: Adaptive Density Outlier Detection. IEEE International Conference on Data Mining (ICDM) 2024.

96. Li, C., Ning, J., Xu, S., Lin, C., Li, J., & Shen, J. (2024). DTACB: Dynamic Threshold Anonymous Credentials With Batch-Showing. IEEE Transactions on Information Forensics and Security, vol. 19, 2024.

97. Li, G., Zhao, S., Li, M., Zhou, M., & Ying, Z. (2024). IDP-Net: Industrial defect perception network based on cross-layer semantic information guidance and context concentration enhancement. Engineering Applications of Artificial Intelligence, 130, 107677.

98. Li, H., Cao, C., Wang, M., Li, Z., Zhang, Q., & Sun, J. ML-AGNN: Smart Contract Vulnerability Detection Method Based on a Multi-Level Attention Graph Neural Network, 20th International Conference on Mobility, Sensing and Networking (MSN 2024) (Accepted)

99. Li, H., Zhao, Y., Duan, J., Gu, J., Liu, Z., Zhang, H., ... & Li, Z. C. (2024). MRI and RNA-seq fusion for prediction of pathological response to neoadjuvant chemotherapy in breast cancer. Displays, 83, 102698.

100. Li, J., Ji, L., Zhang, Y., Lu, Y., & Ning, J. (2024). Response-Hiding and Volume-Hiding Verifiable Searchable Encryption with Conjunctive Keyword Search. IEEE Transactions on Computers.

101. Li, K., Wang, C., Feng, X., & Wu, S. (2024). Blockchain Interoperability in Data Exchange Logistics Integration. Mathematics, 12(10), 1516, doi:10.3390/math12101516.

102. Li, L., Wu, G.*, & Ying, Z. (2024). A Citation Count Prediction Model Based on Bi-LSTM and Transformer. International Conference on Big Data and Privacy Computing.

103. Li, N., Qi, M., Xu, Z., Zhu, X., Zhou, W., Wen, S., & Xiang, Y. (2024). Blockchain Cross-Chain Bridge Security: Challenges, Solutions, and Future Outlook. Distributed Ledger Technologies: Research and Practice.vol.3 no. 23, pp. 1-28. https://doi.org/10.1145/3643895

104. Li, Q., Yi, X., Nie, J., & Zhu, Y. (2024). PR-OppCL: Privacy-Preserving Reputation-Based Opportunistic Federated Learning in Intelligent Transportation System. IEEE Transactions on Vehicular Technology.

105. Li, Q., Zhou, W., & Zheng, X. (2024). Distributed Learning in Intelligent Transportation Systems: A Survey. Information, 15(9), 550.

106. Li, Q., Zhu, Y., & Leong, K. (2024).Privacy-Preserving Federated Learning Framework In Response Gaming Systems. The 24th International Conference on Algorithms and Architectures for Parallel Processing (ICA3PP)

107. Li, W., Zhang, Z., Xie, B., He, Y., He, K., Qiu, H., ... & Hu, Y. (2024). HiOmics: A cloud-based one-stop platform for the comprehensive analysis of large-scale omics data. Computational and Structural Biotechnology Journal, 23, 659-668.

108. Li, X. (2024).A comparison of the practical predictability of hail with initial perturbations of climatological and flow-dependent uncertainty in ensembles.ADVANCES IN ATMOSPHERIC SCIENCES

109. Li, X., Zhou, L., Yin, X., & Ning, J. (2024). A Security-Enhanced Certificateless Designated Verifier Aggregate Signature Scheme for HWMSNs in the YOSO Model. IEEE Internet of Things Journal, vol. 11, no. 6, 15 March, 2024.

110. LI, Xingfeng*; Shi, Xiaohan; Si, Yuke; Zhang, Zilong; Cui, Feifei; Li, Yongwei; Liu, Yang; Unoki, & Masashi; Akagi, Masato(2024) "BEES: A New Acoustic Task for Blended Emotion Estimation in Speech," APSIPA 2024 (accepted), Proceedings, EI.

111. Li, Y., Shi, Z., Li, Y., Chen, Y., Wu, G., & Yang, M. (2024). LLMES: An LLMs-based fuzzy expert system for quality management system audits. Journal Title, Artificial Intelligence and Law.

112. Liang Xue, Tianqing Zhu(2024). Hybrid resampling and weighted majority voting for multi-class anomaly detection on imbalanced malware and network traffic data. Engineering Applications of Artificial Intelligence 128, 107568.

113. Liu Y, Xing L, Wang D, Nie X, Zhang X, Wu D, Liu W (2024) An Early Detection Model of Prostate Cancer Based on MRI. In: The 9th IEEE International Conference on Data Science in Cyberspace (IEEE DSC)

114. Liu Y.; Huang Q.; Li R.; Zhao Z.; Zhao S.; Liu Y.; Zhu Y.; Zhang H. (2024). Semantic Communication Empowered Collaborative Perception in Constrained Networks. IEEE Wireless Communications Letters. (accepted in 12/2024, in press)

115. Liu, C., Zhu, T., Zhao, Y., Zhang, J., & Zhou, W. (2024). Disentangling different levels of GAN fingerprints for task-specific forensics. Computer Standards & Interfaces, 89, 103825.

116. Liu, F., He, C., & Lai, K. H. (2024). Incorporating resource responsibility into production and logistics management: An empirical investigation. Transportation Research Part E: Logistics and Transportation Review, 187, 103593.

117. Liu, X., Liu, T., Yang, H., Dong, J., Ying, Z., & Ma, Z. (2024). Model Stealing Detection for IoT Services Based on Multi-Dimensional Features. IEEE Internet of Things Journal.

118. Liu, X., Zhang, S., Shao, L., Sun, C., Li, B., Wei, W., ... & Tian, J. (2024). Improving prediction of treatment response and prognosis in colorectal cancer with AI-based medical image analysis. The Innovation Medicine, 2(2), 100069-1.

119. Liu, Y., Zhou, L., Wu, G., Xu, S., Han, J., (2024). TCGNet: Type-Correlation Guidance for Salient Object Detection. IEEE Transactions on Intelligent Transportation Systems.

120. Liu, Z., Wu, G.*. (2024). Multimodal Face Generation Model Based on Generative Adversarial Networks and Attention Mechanism. International Conference on Image, Vision and Intelligent Systems

121. Long, J., Zhang, Q., Lu, X., Wen, J., Zhao, L., & Xie, W. (2024). Multi-scale locality preserving projection for partial multi-view incomplete multi-label learning. Neural Networks, 180, 106748.

122. Long, Z., Zhang, K., Li, J., Wu, P., & Ning, J. (2024). Verifiable and Privacy-Enhanced Authorized Keyword Search for Mobile Cloud Storage. IEEE Internet of Things Journal.

123. Lu, Z., Afridi, I., Kang, H. J., Ruchkin, I., & Zheng, X. (2024). Surveying neuro-symbolic approaches for reliable artificial intelligence of things. Journal of Reliable Intelligent Environments, 10(3), 257-279.

124. Lu, Z., Li R., Lei M., Wang C., Zhao Z.; Zhang H. (2024). Self-Critical Alternate Learning Based Semantic Broadcast. IEEE Transactions on Communications. DOI: 10.1109/TCOMM.2024.3487513

125. Lu, Z., Li R., Lei M., Wang C., Zhao Z.; Zhang H. (2024). Self-Critical Alternate Learning Based Semantic Broadcast. IEEE Transactions on Communications. DOI: 10.1109/TCOMM.2024.3487513.

126. Luo, Y., Wu, G.*, Liu, Y., Liu, W., &Han, J. (2024). Towards High-Quality MRI Reconstruction With Anisotropic Diffusion-Assisted Generative Adversarial Networks And Its Multi-Modal.Images Extension, IEEE Journal of Biomedical and Health Informatics.

127. Lyu, P., Zhang, J., Zhang, L., Liu, W., Wang, C., & Zhu, J. (2024, October). MetaUNETR: Rethinking Token Mixer Encoding for Efficient Multi-organ Segmentation. In International Conference on Medical Image Computing and Computer-Assisted Intervention (pp. 446-455). Cham: Springer Nature Switzerland.

128. M. Wang, T. Zhu, X. Zuo, D. Ye, S. Yu and W. Zhou, "Public and Private Blockchain Infusion: A Novel Approach to Federated Learning," in IEEE Internet of Things Journal, vol. 11, no. 10, pp. 17525-17537, 15 May15, 2024, doi: 10.1109/JIOT.2024.3360129.

129. Ma, R., & Li, X. (2024). Effects of a vertical cloud condensation nuclei concentration explosion in an idealized hailstorm simulation. Geophysical Research Letters, 51, e2024GL108592. （2024 年 4 月 10 日）

130. Mengde Han, Tianqing Zhu, Wanlei Zhou(2024). Fair Federated Learning with Opposite GAN. Knowledge-Based Systems 287, 111420.

131. Mi, D., Zhang, Y., Zhang, L. Y., Hu, S., Zhong, Q., Yuan, H., & Pan, S. (2024). Towards Model Extraction Attacks in GAN-Based Image Translation via Domain Shift Mitigation. In Proceedings of the AAAI Conference on Artificial Intelligence (Vol. 38, No. 18, pp. 19902-19910).

132. Miao, Y., Li, F., Li, X., Ning, J., Li, H., Choo, K. K. R., & Deng, R. H. (2024). Verifiable outsourced attribute-based encryption scheme for cloud-assisted mobile e-health system. IEEE Transactions on Dependable and Secure Computing.

133. Ming Chen，CHIAWEI CHU*. Financial Warning of Manufacturing Listed Companies Based on Text Mining. In 2024 International Conference on Modeling,Natural Language Processing and Machine Learning(CMNM 2024), May 17-19, 2024, Xian, China.

134. Minghao Wang, Tianqing Zhu, Xuhan Zuo, Dayong Ye, Shui Yu, Wanlei Zhou(2024). Public and Private Blockchain Infusion: A Novel Approach to Federated Learning. IEEE Internet of Things Journal.

135. Modal-Centric Insights into Multimodal Federated Learning for Smart Healthcare: A Survey" Di Wang, Youyang Qu, Wenjian Liu and Longxiang Gao ICA3PP.

136. Mu, T., Liu, M., Xu, M., Gu, J., & Chen, S. (2024). Minimal residual disease detection with circulating tumor DNA in colorectal cancer: current horizons and future perspectives in clinical applications. ESS Open Archive eprints, 545, 54502384.

137. Ngan, H. F. B., & Lei, C. F. (2024). Sell your soul for a pot of gold: Privacy paradox in surveillance capitalism. Tourism and Hospitality Research, 0(0). https://doi.org/10.1177/14673584241287502

138. Ni, Y., Lu, Y., Jing, F., Wang, Q., Xie, Y., He, X., ... & Tang, W. (2024). A Machine Learning Model for Identifying Sexual Health Influencers to Promote the Secondary Distribution of HIV Self-Testing Among Gay, Bisexual, and Other Men Who Have Sex With Men in China: Quasi-Experimental Study. JMIR Public Health and Surveillance, 10, e50656.

139. Pan, Y., Chen, L.*, Chen, G. (2024). Privacy-preserving local clustering coefficient query on structured encrypted graphs, Computer Networks, Volume 255, 2024, 110895. DOI: 10.1016/j.comnet.2024.110895.

140. Pan, Z., Ying, Z., Wang, Y., Zhang, C., Li, C., & Zhu, L. (2024). One-Shot Backdoor Removal for Federated Learning. IEEE Internet of Things Journal.

141. Peng Wang, Yiyang Su, Bo Huang, Daiyin Zhu, Wenjian Liu, Alexander Nedzved, Viktor V. Krasnoproshin, and Henry Leung. Low Rank Tensor Completion Pansharpening Based on Haze Correction [J]. IEEE Transactions on Geoscience and Remote Sensing, 2024, 62, 5405720

142. Peng Wang; Ang Yan; Yiming Chen ; YuZhou Liu; Gang Xu; Yunge Wang; Wenjian Liu. Subpixel water area mapping based on spatial information processing at superpixel scale for multispectral imagery [J] Remote Sensing Letters, 2024, 15(10): 1063-1073

143. Peng Wang; Mingxuan Huang; Kang Ni; Wenjian Liu; Bo Huang; MingZhuan Xu. Improving spatiotemporal image fusion incorporating unmixing step by considering the point spread function effect [J] International Journal of Remote Sensing, 2024, 45(10): 3274-3288

144. Peng, F., Cui, S., Ling, Z. (2024).   Enhancing End-to-End Speech Emotion Recognition Using Dual-Stream with Multi-Task Learning. 2024 the 10th International Conference on Computer and Communications (2024 ICCC). (ACCEPTED)

145. Peng, Sheng, Linkai Zhu, Shanwen Hu, Zhiming Cai, and Wenjian Liu. 2024. "Enhancing Global Blockchain Privacy via a Digital Mutual Trust Mechanism" Mathematics 12, no. 10: 1481. https://doi.org/10.3390/math12101481

146. Pengju Lyu, Wenjian Liu, Tingyi Lin, Jie Zhang, Yao Liu, Cheng Wang and Jianjun Zhu Semi-supervised segmentation of abdominal organs and liver tumor: uncertainty rectified curriculum labeling meets X-fuse Machine Learning: Science and Technology, Volume 5, Number 2， DOI 10.1088/2632-2153/ad4c38

147. Q. Zhou, Y. Guo, et al. Progressive Multiscale Attention Network for Diabetic Retinopathy. International Conference on Algorithms and Architectures for Parallel Processing (ICA3PP), 2024, Accepted.

148. Qi, M., Wang, Z., Han, Q. L., Zhang, J., Chen, S., & Xiang, Y. (2024). Privacy protection for blockchain-based healthcare IoT systems: A survey. IEEE/CAA Journal of Automatica Sinica.vol. 11, no. 8, pp. 1757-1776.

149. Qin, P., Hu, Q., & Cui, M. (2024). Towards machine-readable semantic-based E-business contract representations using Network of Timed Automata (NTA). Future Generation Computer Systems, 158, 457-471.

150. Qingzheng Xu, Huiqiang Chen, Heming Du, Hu Zhang, Szymon Łukasik, Tianqing Zhu, Xin Yu(2024). M3A: A multimodal misinformation dataset for media authenticity analysis. Computer Vision and Image Understanding 249, 104205.

151. Qiong Li, Wanlei Zhou, Xi Zheng(2024). Distributed Learning in Intelligent Transportation Systems: A Survey. Information 15 (9), 550.

152. Qiu, Z. Zhong, Q.*, Qi, M. FedSweep: Advanced Detection and Unlearning of Backdoors in Federated Learning. Submitted to PAKDD2025.

153. Ren, H., Jing, F., Chen, Z., He, S., Zhou, J., Liu, L., ... & Cheng, W. (2024). CheXMed: A multimodal learning algorithm for pneumonia detection in the elderly. Information Sciences, 654, 119854.

154. Ren, H., Xu, G., Zhang, T., Ning, J., Huang, X., Li, H., & Lu, R. (2024). Efficiency boosting of secure cross-platform recommender systems over sparse data. IEEE Transactions on Dependable and Secure Computing.

155. Rongsheng Cai, Lanxiang Chen*, Yizhao Zhu (2024). Using Private Set Intersection to Achieve Privacy-Preserving Authorization for IoT Systems. Journal of Information Security and Applications, Vol. 83, 103759, June 2024.

156. S. Zhou, T. Zhu, D. Ye, W. Zhou and W. Zhao, "Inversion-Guided Defense: Detecting Model Stealing Attacks by Output Inverting," in IEEE Transactions on Information Forensics and Security, vol. 19, pp. 4130-4145, 2024, doi: 10.1109/TIFS.2024.3376190.

157. Shen, S., Liu, C., & Lim, T. J. (2024). Federated learning with heterogeneous client expectations: A game theory approach. IEEE Transactions on Knowledge and Data Engineering, 1–18.

158. Sheng Shen, Dayong Ye, Tianqing Zhu, Wanlei Zhou(2024). Privacy preservation in deep reinforcement learning: A training perspective. Knowledge-Based Systems 304, 112558.

159. Shenzhi Li , Biao Zhang , Shuanglin Zhao , Peng Wang. (2024). Research on Fire Classification and Detection Models Based on Deep Learning.

160. Shi G., Qi M. Zhong Q.*, Zhang, L., Zhu T. and Gao L., MEDACCESSX: A Blockchain-Enabled Dynamic Access Control Framework for IoMT Networks. Submitted to IEEE Internet of Things Journal.

161. Shi, C., Chu, C., Su, J., (2024). A Study on Question and Answer Intent Recognition in Medical Domain based on Prompt Learning. Proceedings of 2024 Cross Strait Radio Science and Wireless Technology Conference (CSRSWTC 2024), November 4-7, 2024, Macao SAR, China.

162. Shi, C., Su, J., Chu, C., Wang, B., Feng, D., (2024). Balancing Privacy and Robustness in Prompt Learning for Large Language Models, Mathematics, 12, 3359.

163. Shi, Xiaohan*; Gao, Yuan; He, Jiajun; Mi, Jinyi; LI, Xingfeng; & Toda, Tomoki.(2024) "A Study on Multimodal Fusion and Layer Adapter in Emotion Recognition," APSIPA 2024 (accepted), Proceedings, EI.

164. Shi, Y., Hu, B., Xu, M., Yao, Y., Gao, S., Xia, X., ... & Chen, S. (2024). Application of quantitative histomorphometric features in computational pathology. Interdisciplinary Medicine, e20240037.

165. Shuai Zhou, Tianqing Zhu, Dayong Ye, Wanlei Zhou, Wei Zhao(2024). Inversion-guided Defense: Detecting Model Stealing Attacks by Output Inverting. IEEE Transactions on Information Forensics and Security.

166. Song, Y., Ren, H., Jing, F., He, C., Xie, Y., Zhou, J. (2024). Enhancing Pneumonia Diagnosis with an Ensemble Transformer-Based Attention Network for Chest X-Ray Image Analysis. 2024 2nd International Conference on Big Data and Privacy Computing.

167. Sun, H., Zhu, T., Chang, W., & Zhou, W. (2024). A two-stage model extraction attack on GANs with a small collected dataset. Computers & Security, 137, 103634.

168. Suo, K., Vu, L., Islam, M. R., Dhar, N., Nguyen, T. N., He, S., & Wu, X. (2024, April). A Systematic Investigation of Hardware and Software in Electric Vehicular Platform. In Proceedings of the 2024 ACM Southeast Conference (pp. 9-17).

169. Tai, W.-C., Duong, N.-T., Wei, C.-L., Wang, Y.-M., Yang, J.-H., Chen, K.-L., & Wang, Y.-S. (2024). What Drives Users' Removal Behavior of Mobile Apps. Journal of Computer Information Systems, 1–17. https://doi.org/10.1080/08874417.2024.2361663

170. Tan, M., Xiao, Y., Jing, F., Xie, Y., Lu, S., Xiang, M., & Ren, H. (2024). Evaluating Machine Learning-Enabled and Multimodal Data-Driven Exercise Prescriptions for Mental Health: A Randomized Controlled Trial Protocol. Frontiers in Psychiatry, Volume 15 - 2024

171. Teng, P., Liu, W., Wang, X., Wu, D., Yuan, C., Cheng, Y., & Huang, D. S. (2024). Beyond singular prototype: A prototype splitting strategy for few-shot medical image segmentation. Neurocomputing, 127990

172. Tian, H., Kong, H*., & Wong, C. (2024). A Novel Stacking Ensemble Learning Approach for Predicting PM2. 5 Levels in Dense Urban Environments Using Meteorological Variables: A Case Study in Macau. Applied Sciences, 14(12), 5062.

173. Tianqing Zhu, Yannan Li(2024). Information Security and Privacy: 29th Australasian Conference, ACISP 2024, Sydney, Australia, NSW, Australia. July 15-17, 2024: Proceedings. Springer Nature.

174. Tong S.; Yu X.; Li R.; Lu K.; Zhao Z.; Zhang H. (2024). Alternate Learning-Based SNR-Adaptive Sparse Semantic Visual Transmission. IEEE Transactions on Wireless Communications. DOI: 10.1109/TWC.2024.3512652.

175. Towards Information Sharing Beetle Antennae Search Optimization" (Paper ID: 96) Xuan Liu, Chenyan Wang, Wenjian Liu, Lefeng Zhang, Xianggan Liu and Yutong Gao ICA3PP

176. Towards Simplified Graph Neural Networks for Identifying Cancer Driver Genes in Heterophilic Networks，Xingyi Li, Jialuo Xu, Junming Li, Jia Gu and Xuequn Shang，Applied soft computing（preprint）

177. TS-CPC: A Self-Supervised Method for Trajectory Similarity Measurement with Advanced Data Augmentation

178. Wang, C., Ying, Z., & Pan, Z. (2024). Machine unlearning in brain-inspired neural network paradigms. Frontiers in Neurorobotics, 18, 1361577.

179. Wang, H., Ning, J., Wu, W., Lin, C., & Zhang, K. (2024). KA 2 SE: Key-Aggregation Authorized Searchable Encryption Scheme for Data Sharing in Wireless Sensor Networks. IEEE Transactions on Services Computing.

180. Wang, L. and Jiang, S. (2024), City Influence Network: Mining and Analyzing the Influence of Chinese Cities Based on Social Media. Transactions in GIS, 28: 2509-2525. https://doi.org/10.1111/tgis.13249

181. Wang, M. H., Xing, L., Pan, Y., Gu, F., Fang, J., Yu, X., ... & Liu, W. (2024). AI-based Advanced approaches and dry eye disease detection based on multi-source evidence: Cases, applications, issues, and future directions. Big Data Mining and Analytics, 7(2), 445-484.

182. Wang, S., Ning, J., Xu, S., Li, J., & Zhang, K. (2024). Fine-Grained and Sanitizable Access Control Service for IoT-Based Digital Subscriptions. IEEE Internet of Things Journal, vol. 11, no. 20, pp. 33940-33952, 15 Oct.15, 2024.

183. Wang, Y., Li, C., Zhang, Y., Li, T., Ning, J., Gai, K., & Choo, K. K. R. (2024). A Detection Method Against Selfish Mining-Like Attacks Based On Ensemble Deep Learning in IoT. IEEE Internet of Things Journal, vol. 11, no. 11, 1 June, 2024.

184. Wang, Y., Liu, C., Hu, W., Luo, L., Shi, D., Zhang, J., Yin, Q., Zhang, L., Han, X., & He, M. (2024). Economic evaluation for medical artificial intelligence: Accuracy vs. Cost-effectiveness in a diabetic retinopathy screening case. Npj Digital Medicine, 7(1), 43.

185. Wang, Y., Liu, C., Zhou, K., Zhu, T., & Han, X. (2024). Towards regulatory generative AI in ophthalmology healthcare: A security and privacy perspective. British Journal of Ophthalmology, 108(10), 1349–1353.

186. Wang, Y.-M., Chiu, W.-C., Wei, C.-L., Wang, H.-H., Yang, J.-H., & Wang, Y.-S. (2024). What drives consumers' intention to purchase self-driving cars. Managerial and Decision Economics, 45(4), 1773–1792

187. Wang, Y.-M., Wei, C.-L., Lin, H.-H., & Wang, Y.-S. (2024). What Drives Internet Entrepreneurial Commitment in Taiwan: The Moderating Effects of Job Type and Personal Innovativeness. Journal of Organizational and End User Computing, 36(1), 1-33. http://doi.org/10.4018/JOEUC.348956

188. Wang, Yueye, Chi Liu, Wenyi Hu, Lixia Luo, Danli Shi, Jian Zhang, Qiuxia Yin, Lei Zhang, Xiaotong Han, and Mingguang He. "Economic evaluation for medical artificial intelligence: accuracy vs. cost-effectiveness in a diabetic retinopathy screening case." npj Digital Medicine 7, no. 1 (2024): 43.

189. Wei Li, Ruoqi Lian, Huoling Luo, Weikai Qu, Wenjian Liu, and Fucang Jia, "FFC-Stereo: Stereo matching of binocular endoscopic images by Fast Fourier Convolution" IEEE BIBM 2024

190. Wei Li· Fucang Jia · Wenjian Liu. EndoSRR: a comprehensive multi-stage approach for endoscopic specular reflection removal.　International Journal of Computer Assisted Radiology and Surgery https://doi.org/10.1007/s11548-024-03137-8

191. Wei Ye, Hao Tian, Shuhao Tang, Xin Sun. Enhancing Shortest-Path Graph Kernels via Graph Augmentation. European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD), 2024.

192. Weiping Ding, Ibrahim Alrashdi, Hossam Hawash and Mohamed Abdel-Basset，(2024). "DeepSecDrive: An Explainable Deep Learning Framework for Real-Time Detection of Cyberattack in In-Vehicle Networks," Information Sciences 658 (2024) 120057.(2024.3.1).

193. Weiping Ding, Mohamed Abdel-Basset, Ibrahim Alrashdi, and Hossam Hawash, (2024). "Next generation of Computer Vision for Plant Disease Monitoring in Precision Agriculture: A Contemporary Survey, Taxonomy, Experiments, and Future Direction," Information Sciences 665 (2024) 120338.(2024.4.5)"

194. Weiping Ding, Tianyi Zhou, Jiashuang Huang, Shu Jiang, Tao Hou, Chin-Teng Lin(2024). "FMDNN: A Fuzzy-guided Multi-granularity DeepNeural Network for Histopathological Images Classification," IEEE Transactions on Fuzzy Systems, 2024,32(8): 4709-4723(2024.8.7)

195. Weiping Ding, Ying Sun, Jiashuang Huang, Hengrong Ju, Chongsheng Zhang, Guang Yang, and Chin-Teng Lin,(2024). "RCAR-UNet: Retinal Vessel Segmentation Network Algorithm via Novel Rough Attention Mechanism," Information Sciences 657 (2024) 120007. (2024.2.6)"

196. Wenhan Chang, Tianqing Zhu, Gradient-based defense methods for data leakage in vertical federated learning, Computers & Security, Volume 139, 2024, ISSN 0167-4048, https://doi.org/10.1016/j.cose.2024.103744.

197. Wu J., Zhang K., Wei L., Gong J., & Ning J. (2024) Practical Searchable Symmetric Encryption for Arbitrary Boolean Query-Join in Cloud Storage. IEEE Transactions on Information Forensics and Security, vol. 19, pp. 10086-10098, 2024.

198. Wu, X., Bojkovic, V., Gu, B., Suo, K., & Zou, K. (2024). FTBC: Forward Temporal Bias Correction for Optimizing ANN-SNN Conversion. In Proceedings of The 18th European Conference on Computer Vision ECCV 2024.

199. Wu, Y., Chen, L.*, Chen, G., Mu, Y., & Deng, R. H. (2024). Private Reachability Queries on Structured Encrypted Temporal Bipartite Graphs. IEEE Transactions on Dependable and Secure Computing. DOI: 10.1109/TDSC.2024.3473808.

200. Wu, Y., Keel, S., Carneiro, V. L. A., Zhang, S., Wang, W., Liu, C., Tang, X., Han, X., & He, M. (2024). Real-world application of a smartphone-based visual acuity test (WHOeyes) with automatic distance calibration. British Journal of Ophthalmology, 108(11), 1613–1620.

201. Wu, Yi, Stuart Keel, Vera Lúcia Alves Carneiro, Shiran Zhang, Wei Wang, Chi Liu, Xuanzhang Tang, Xiaotong Han, and Mingguang He. "Real-world application of a smartphone-based visual acuity test (WHOeyes) with automatic distance calibration." British Journal of Ophthalmology (2024).

202. X. Sui, S. Wang, & Y. Fang. (2024). A Survey on Objective Quality Assessment of Omnidirectional Images. Asia Pacific Signal and Information Processing Association Annual Summit and Conference.

203. Xia Feng, Qichen Shi, Xinye Li, Haiyang Liu, Liangmin Wang; IDPonzi: An Interpretable Detection Model for Identifying Smart Ponzi Schemes, Engineering Applications of Artificial Intelligence (Accept).

204. Xiangfei Liu, Zhile Yang, Yuanjun Guo*, Zheng Li, Xiandong Xu. A novel correlation feature self assigned Kolmogorov-Arnold Networks for Multi-energy load forecasting in integrated energy systems. Energy Conversion and Management.

205. Xiao, Z., Chen, J., Fan, X., Zhao, W., Chu, C., & Zhang, J. V. (2024). The Impact of Chemokine-Like Receptor 1 Gene Knockout on Lipopolysaccharide-Induced Epididymo-Orchitis in Mice. Journal of Interferon & Cytokine Research. doi: 10.1089/jir.2024.0152. Online ahead of print

206. Xiaoya Wang, Tianqing Zhu, Wanlei Zhou, Supplement data in federated learning with a generator transparent to clients, Information Sciences, Volume 666, 2024, ISSN 0020-0255, https://doi.org/10.1016/j.ins.2024.120437.

207. Xing, L., Liu, W., Wang, X., Li, X., Xu, R., & Wang, M. H. (2024). Deformable registration network based on multi-scale features and cumulative optimization for medical image alignment. Biomedical Signal Processing and Control, 95, 106172.

208. Xiong, B., Peng, Y., Zhu, J., Gu, J., Chen, Z., & Qin, W. (2024). AGWNet: Attention-guided adaptive shuffle channel gate warped feature network for indoor scene RGB-D semantic segmentation. Displays, 102730.

209. Xu C., Liu X., Weng Y., Jiang S., Tang X. and Qi M. (2024); Style-specific Music Generation From Image; International Conference on Algorithms and Architectures for Parallel Processing. Accepted.

210. Xu, N., Yang, B., Jin, J., Deng, L., & Ren, J. (2024). Research on tropical cyclone tracks classification methods and feature analysis in the Western Northern Pacific. In Proceedings of The 24rd International Conference on Algorithms and Architectures for Parallel Processing (ICA3PP 2024). Springer.

211. Xu, S., Han, X., Xu, G., Ning, J., Huang, X., & Deng, R. H. (2024). An adaptive secure and practical data sharing system with verifiable outsourced decryption. IEEE Transactions on Services Computing, vol. 17, no. 3, MAY/JUNE, 2024.

212. Xu, S., Ning, J., Li, X., Yuan, J., Huang, X., & Deng, R. H. (2024). A privacy-preserving and redactable healthcare blockchain system. IEEE Transactions on Services Computing, 17(2): 364–377, March–April 2024.

213. Xuanchen Zhou, Gengshen Wu, Xin Sun, Pengpeng Hu, Yi Liu, Attention-Based Multi-Kernelized and Boundary-Aware Network for image semantic segmentation, Neurocomputing, Volume 597, 2024, 127988

214. Xue, J., Cui, S., & Zhang, W. (2024). Leveraging Neural Vocoder Artifacts for Improved Synthetic Speech Detection. 2024 7th International Conference on Sensors, Signal and Image Processing (SSIP2024). (ACCEPTED)

215. Y. Lin, Y. Guo. A Progressive Training Framework for Image Super-Resolution.

216. Y. Liu, Y. Guo, Q. Li. Research on image texture structure filling algorithm based on MAE prior model. IEEE International Conference on Electronic Technology, Communication and Information (ICETCI), 2024, 787-792.

217. Y. Weng, Y. Guo. Remote Scene Image Classification Based on Vision-LSTM Model.

218. Yajie Wang, Yi Wu, Shangbo Wu, Ximeng Liu, Wanlei Zhou, Liehuang Zhu, Chuan Zhang(2024). Boosting the Transferability of Adversarial Attacks with Frequency-aware Perturbation. IEEE Transactions on Information Forensics and Security.

219. Yan Yan, Mengjuan Fan.（2024）.Language Game for Evading Privacy Disclosure Risks via LLM-based Multi-agent Simulation.The 3rd International Conference on Cyberspace Simulation and Evaluation

220. Yan, S., Yu, Z., Liu, C., Ju, L., Mahapatra, D., Betz-Stablein, B., Mar, V., Janda, M., Soyer, P., & Ge, Z. (2024). Prompt-driven latent domain generalization for medical image classification. IEEE Transactions on Medical Imaging, 1–1.

221. Yan, S., Zhang, Q*, Zhang X., Sun, J., Zhou, J. Multi-channel color space analysis for nuclei segmentation in histopathology images. PRAI 2024 (Accepted)

222. Yang, B., Xu, N., Deng, L., & Ren, J. (2024). Development of a refined wave field forecast model based on LSTM and its application in the Qiongzhou Strait. In Proceedings of The 2024 International Conference on Cyber-physical Social Intelligence. IEEE.

223. Yang, X., Zhu, F., Yang, X., Luo, J., Yi, X., Ning, J., & Huang, X. (2024). Secure Reputation-Based Authentication With Malicious Detection in VANETs. IEEE Transactions on Dependable and Secure Computing.

224. Ye, X., Zhang, Q.*, Cui, S., Ying, Z., Sun, J., & Du, X.* (2024). Mitigating Adversarial Attacks in Object Detection through Conditional Diffusion Models. Mathematics, 12(19), 3093.

225. Yi, Zhengheng and Lai, Xinsheng and Sun, Aining and Fang, Senlin (2024). Tongue feature recognition to monitor rehabilitation: deep neural network with visual attention mechanism. Frontiers in Bioengineering and Biotechnology, 12, 1392513. (2024.05.09)

226. Ying, Z., Ding, Q., Li, W., Xu, S., & Xiong, J. (2024, July). Towards Scalable and Secure IoTs Transactions: A New Bi-directional Payment Channel Without Third-Party Monitoring. In Australasian Conference on Information Security and Privacy (pp. 120-139). Singapore: Springer Nature Singapore.

227. Ying, Z., Wang, K., Xiong, J., & Ma, M. (2024). A literature review on V2X communications security: Foundation, solutions, status, and future. IET Communications.

228. Yizhao Zhu, Lanxiang Chen*, Yi Mu (2024).Practical and malicious private set intersection with improved efficiency. Theoretical Computer Science, Vol. 991, 114443, April 2024.

229. Yonghao Wang, Chiawei Chu, Kaiye Li. Research on Game Recommendation Algorithms Based on Hybrid Models. In The 3rd International Conference on Computer, Artificial Intelligence and Control Engineering (CAICE 2024), January 26-28, 2024, Xian, China. ACM, New York, NY, USA, 12 Pages. https://doi.org/10.1145/3672758.3672803

230. Yu LI, Chiawei CHU*, Xingyu LIU. Improved DeepFM-Based Model with LSTM on Click-Through-Rate. In 5th International Conference on Computer Information and Big Data Applications (CIBDA), April 26-28, 2024, Wuhan, China. ACM, New York, NY, USA, 8 Pages. https://doi.org/10.1145/3671151.3671161

231. Yu, D., Kong, H.*, Leung, J. C. H., Chan, P. W., Fong, C., Wang, Y., & Zhang, B. (2024). A 1D Convolutional Neural Network (1D-CNN) Temporal Filter for Atmospheric Variability: Reducing the Sensitivity of Filtering Accuracy to Missing Data Points. Applied Sciences, 14(14), 6289.

232. Yuan Z., Li Y.& Duan J.,Water Surface Autonomus Navigation Simulation via Muli-agent Proximal Policy Optimization, 2024 International Conference on Intelligent Robotics and Automatic Control, Guangzhou, 2024.

233. Yuan Zhao, Bo Liu, Tianqing Zhu, Ming Ding, Xin Yu, Wanlei Zhou(2024). Proactive image manipulation detection via deep semi-fragile watermark. Neurocomputing 585, 127593.

234. Yueming LIU, Chiawei CHU, Jiaheng YANG, Yulong XU, Baojia LI: Hierarchical Analysis of the Relationships between the Main Characters in the First 80 Chapters and the Last 40 Chapters of A Dream of Red Mansions Based on Natural Language Modelling. In 2024 IEEE 4th International Conference on Electronic Communications, Internet of Things and Big Data (IEEE ICEIB 2024). April 19-21, 2024. Taipei, Taiwan. 3 Pages.

235. Yueming Liu，Chiawei CHU，Jiaheng Yang，Haokai Deng，Yifeng Hua: Modeling and analysis of the social network of Dream of Red Mansions based on natural language processing. In The 3rd International Academic Conference on Blockchain, Information Technology and Smart Finance (ICBIS 2024), Feburary 23-25, 2024. Malaysia. 9 Pages.

236. Yuexin Xiang, Tiantian Li, Wei Ren, Jie He, Tianqing Zhu, Kim-Kwang Raymond Choo(2024). AdvEWM: Generating image adversarial examples by embedding digital watermarks. Journal of Information Security and Applications 80, 103662.

237. Yueye Wang, Chi Liu, Keyao Zhou, Tianqing Zhu, Xiaotong Han(2024). Towards regulatory generative AI in ophthalmology healthcare: a security and privacy perspective. British Journal of Ophthalmology.

238. YuLong Xu, ChiaWei Chu,YueMing Liu, Te Guo, ChungLun Wei1.Research on the Application of YOLO Algorithm in Nuclide Identification. In the 3rd International Conference on Computer, Artificial Intelligence and Control Engineering (CAICE 2024), January 26-28, 2024, Xian, China. ACM, New York, NY, USA, 8 Pages. https://doi.org/10.1145/3672758.3672865

239. Yunjiao Lei, Dayong Ye, Congcong Zhu, Sheng Shen, Wanlei Zhou, Tianqing Zhu, A GNN-based teacher–student framework with multi-advice, Expert Systems with Applications, Volume 250, 2024, ISSN 0957-4174, https://doi.org/10.1016/j.eswa.2024.123887.

240. Yunjiao Lei, Dayong Ye, Tianqing Zhu, Wanlei Zhou(2024). A federated advisory teacher–student framework with simultaneous learning agents. Knowledge-Based Systems 305, 112637.

241. Yuting Yang, Xin Sun, Junyu Dong, Kin-Man Lam, Xiao Xiang Zhu, Attention-ConvNet Network for Ocean Front Prediction via Remote Sensing SST Images, IEEE Transactions on Geoscience and Remote Sensing, 2024, https://ieeexplore.ieee.org/abstract/document/10750822

242. Yuxiang He, Baisong Yang, Chiawei Chu. (2024). Predicting the Impact of Emergencies: A Multi-Modal Data-Driven Approach Using LightGBM Model. In the 2024 International Conference on Data Analysis and Cybersecurity (ICDAAC 2024), July 15, 2024, Wuhan, China. 11 Pages.

243. Z. Zhang, Y. Guo, et al. Diabetic Foot Monitoring Based on A Lightweight Model. Cross Strait Radio Science and Wireless Technology Conference(CSRSWTC)，2024, Accepted.

244. Zeng L Y, Li K, Li L F, et al. Research progress in high-entropy superconductors (in Chinese). Chin Sci Bull, 2024, doi: 10.1360/TB-2023-1119

245. Zhang Chi, Feng Xia(2024). An Identity-based Conditional Privacy-Preserving Authentication Scheme with Key Protection for VANETs. 2024 IEEE 12th International Conference on Information, Communication and Networks (Accept).

246. Zhang, B., Yang, W., Zhang, F., & Ning, J. (2024). Efficient Attribute-Based Searchable Encryption with Policy Hiding over Personal Health Records. IEEE Transactions on Dependable and Secure Computing.

247. Zhang, K., Deng, M., Gong, B., Miao, Y., & Ning, J. (2024). Privacy-Preserving Traceable Encrypted Traffic Inspection in Blockchain-based Industrial IoT. IEEE Internet of Things Journal, vol. 11, no. 2, pp. 3484-3496, 15 Jan., 2024.

248. Zhang, P., Wu, G.*, & Liu, W. (2024). Towards Better Top-K Recommendation with Attention-Aware Collaborative Matrix Factorization. International Conference on Big Data and Privacy Computing.

249. Zhang, Q., Ying, Z., Shen, J., Kou, S. K., Sun, J., & Zhang, B. (2024). Unsupervised Color-Based Nuclei Segmentation in Histopathology Images with Various Color Spaces and K Values Selection. International Journal of Image and Graphics, 2550061.

250. Zhang, W., Cui, S., Xue, J. (2024). Fake Image Detection Based on Attention-based Feature Aggregation. 2025 The 11th International Conference on Communication and Information Processing (ICCIP 2025). (ACCEPTED)

251. Zhang, X., Zhang, Q.*, Li, P., You, J., Sun, J., & Zhou, J. (2024). Multi-Feature Extraction and Selection Method to Diagnose Burn Depth from Burn Images. Electronics, 13(18), 3665.

252. Zhang, Y., Liu, W., Kuok, K., & Cheong, N. (2024). Anteater: Advanced Persistent Threat Detection With Program Network Traffic Behavior. IEEE Access.

253. Zhang.B.,Zhang. Q.,Zhang X.,Ye X.,Duan J.,Broad Learning Model for Classification with Dual Feature Extractionn and Discriminative Group-Sparsity Constraint.2025 17th International Conference on Machine Learning and Computing, Guangzhou, 2025.

254. Zhao, C., Du, R., He, K., Chen, J., Li, J., Liu, X., & Ning, J. (2024). Efficient Verifiable Dynamic Searchable Symmetric Encryption With Forward and Backward Security. IEEE Internet of Things Journal.

255. Zhao, P., Zhong, Q., Chen, J., Wang, X., Qin, Z., & Zhou E. (2024). A Linked List Encryption Scheme for Image Steganography Without Embedding. Computer Modeling in Engineering & Sciences. (Accepted)

256. Zhao, S., Jing, F., Wang, Z., Huang, J. (2024). Predicting Supply Chain Upstreamness Using An Ensemble Machine Learning Method. IEEE 2024 12th International Conference on Traffic and Logistic Engineering

257. Zhao, Z., Wu, G.*. (2024). Multi-Scale Confidence-Aware Feature Fusion Network for Crowd Counting. The 4th International Conference on Frontiers of Electronics, Information and Computation Technologies

258. Zheng, Z., He, J., Gu, J., Chen, Z., & Qin, W. (2024). Saliency-guided stairs detection on wearable RGB-D devices for visually impaired persons with Swin-Transformer. Pattern Recognition Letters, 177, 47-53.

259. Zhou Z., Gao Y. and Qi M. (2024). Data Poisoning Attack against Reinforcement Learning from Human Feedback in Robot Control Tasks; International Conference on Algorithms and Architectures for Parallel Processing Accepted.

260. Zhou, Z., Chen, Y., Yu, J., Zu, B., Wang, Q., Zhou, X., & Duan, J. (2024). Mars Exploration: Research on Goal-Driven Hierarchical DQN Autonomous Scene Exploration Algorithm. Aerospace, 11(8), 692.

261. Zhu, C., Ye, D., Huo, H., Zhou, W., & Zhu, T. (2024). A location-based advising method in teacher–student frameworks. Knowledge-Based Systems, 285, 111333.

262. Zhu, L.*, Zhang, Q.*, Chen, K., Ma, Q., Chen, S., Zhang, S., & Yuan, Y. (2024). Lightweight Self-Supervised Recognition of Small-Sample Ships Using Micro-Doppler Signatures and UAV-based UWB Radar. IEEE Transactions on Instrumentation and Measurement.

263. Zhu, W., Kong, H., Cai, W., & Zhu, W. (2024, June). Predicting Urban Traffic Flow Based on Deep Meta-learning. In Proceedings of the 2024 4th International Conference on Artificial Intelligence, Big Data and Algorithms (pp. 1170-1174).

264. Zhu, W., Kong, H., Cai, W., & Zhu, W. (2024, September). Traffic flow prediction based on graph attention network. In International Conference on Automation Control, Algorithm, and Intelligent Bionics (ACAIB 2024) (Vol. 13259, pp. 576-581). SPIE.

265. Zhu, Y., Chen, L.* (2024). Privacy-Preserving Responsible Gaming Systems. 2024 2nd International Conference on Big Data and Privacy Computing (BDPC), Macau, China, 10-12 January 2024, pp. 37-42, doi: 10.1109/BDPC59998.2024.10649298.

266. Zihang Xu, Chiawei Chu*, Shiyang Song. An Effective Federated Recommendation Framework with Differential Privacy. Electronics. 2024, 13, 1589.

267. Zihang Xu, Chiawei Chu. A Hybrid Deep Learning Model Utilizing Cross-Structural Multi-Behavioral Comparative Recommendation for Sustainable Electric Transportation Infrastructure. Applied Sciences. 2024; 14(7):3092.

268. 王静, 聂露瑜, & 段俊伟. (2024). 中职班主任对班级非正式群体的管理策略分析. 教学方法创新与实践, 7(5), 127-129.