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# 2025 International Conference on Intelligent Multimedia, Networking, and Security

2025年智能多媒体、网络与安全国际会议

## Conference Manual 会议手册

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Qingdao, China

July 5th , 2025

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[www.conf-imns.com](http://www.conf-imns.com)

青岛市崂山区松岭路99号





# Contents

## 目录

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❶ 组织委员会 Organizing Committee	3
❷ 会议日程 Conference Schedule	4-9
❸ 特邀嘉宾 Keynote Speakers	10-14
❹ 会场信息 Venue Information	15

## Organizing Committee 组织委员会

### Conference Chair 大会主席：

- Shaoen Wu 吴绍恩, Kennesaw State University 肯尼绍州立大学, USA
- Jingjing Wang 王景景, Qingdao University of Science and Technology 青岛科技大学, China

### Program Chair 程序委员会主席：

- Tianqing Zhu 朱天清, City University of Macau 澳门城市大学, China
- Zaobo He 何早波 , Jinan University 暨南大学, China
- MD Shaad Mahmud, University of New Hampshire 新罕布什尔大学, USA

### Local Chair 本地主席：

- Ye Tao 陶冶, Qingdao University of Science and Technology 青岛科技大学, China

### Financial Chair 财务主席：

- Lixing Li, Rose-Hulman Institue of Technology 罗斯-霍曼理工学院, USA



## Conference Schedule 会议日程

Registration 大会报道、注册		
Time 时间	Program 内容	Venue 地点
7月4-5日, 4th-5th July, 8:30-17:00	大会报道、注册 Registration	报告大厅402 Conference Hall 402
5th July Morning 7月5日 上午: 开幕式、主题报告		
Time 时间	Program 内容	Venue 地点
08:30-08:40	开幕式致辞 Opening  Speaker (TBC) (Qingdao University of Science and Technology)	报告大厅402 Conference Hall 402  Chair: Prof. Ye Tao (Qingdao University of Science and Technology)
08:40-09:00	合影 Group Photo	
09:00-09:30	主题报告 Keynote Talk: Service-Centric Data Storage, Security and Robustness  Prof. Jian Ren (Michigan State University)	
09:30-10:00	主题报告 Keynote Talk: Towards Explainable LLM Security and Evaluation  Prof. Shouling Ji (Zhejiang University)	
10:00-10:20	茶歇 Break	

Conference Schedule  
会议日程

5th July Morning 7月5日 上午: 开幕式、主题报告		
Time 时间	Program 内容	Venue 地点
10:20-10:50	<p>主题报告 Keynote Talk: A Lightweight Deep Learning Solution to mmWave Hu-man Activity Recognition</p> <p>Prof. Shaoen Wu (Kennesaw State University)</p>	<p>报告大厅402 Conference Hall 402</p> <p>Chair: Prof. Ye Tao (Qingdao University of Science and Technology)</p>
10:50-11:20	<p>主题报告 Keynote Talk: A Succinct Range Proof for Polynomial-based Vector Commitment</p> <p>Prof. Huaqun Wang (Nanjing University of Posts and Telecommunications)</p>	
11:20-11:50	<p>主题报告 Keynote Talk: Full-duplex Underwater Magnetic Induction Communication: Opportunities and Challenges</p> <p>Dr. Muhammad Muzzammil (Harbin Engineering University)</p>	
12:00-14:00	Lunch 午餐	索菲亚国际大酒店 Sophia International Hotel

Conference Schedule  
会议日程

5th July Afternoon 7月5日 下午: 分会场报告			
Time	Paper Title	Authors	Venue
14:00 - 16:15	Marine Mammal Call Classification Based on Data Enhancement and Channel Shuffling Attention	Meng Wang (Qingdao University of Science and Technology, Shandong Key Laboratory of Deep Sea Equipment Intelligent Networking); Zhao Liu (Qingdao University of Science and Technology, Shandong Key Laboratory of Deep Sea Equipment Intelligent Networking); Shuai Jiang (Qingdao University of Science and Technology, Shandong Key Laboratory of Deep Sea Equipment Intelligent Networking); Wei Shi (Qingdao University of Science and Technology, Shandong Key Laboratory of Deep Sea Equipment Intelligent Networking); Qiuna Niu (Qingdao University of Science and Technology, Shandong Key Laboratory of Deep Sea Equipment Intelligent Networking)*; Jingjing Wang (Qingdao University of Science and Technology, Shandong Key Laboratory of Deep Sea Equipment Intelligent Networking)	<p>会议室 406 Room 406</p> <p>Chair: Dr. Ye Jiang (Qingdao University of Science and Technology)</p>
	A Marine Mammal Call Classification Method Based On IVGG - Asnet	Jiaming Jiang (Qingdao University of Science and Technology); Jingjing Wang (Qingdao University of Science and Technology); Qiuna Niu (Qingdao University of Science and Technology); Xinghai Yang (Qingdao University of Science and Technology); Lingwei Xu (Qingdao University of Science and Technology); Shengwen Gong(Qingdao University of Science and Technology)*	
	Dynamic Order Splitting and Staged Matching for V2V Energy Trading: A Deep Reinforcement Learning Approach	Peng Li (Qingdao University of Science and Technology)*; Lijun Sun (Qingdao University of Science and Technology)*	



Conference Schedule  
会议日程

5th July Afternoon 7月5日 下午: 分会场报告			
Time	Paper Title	Authors	Venue 地点
14:00 - 16:15	Design of a Magnetic Coupling Structure for Efficient Wireless Charging of AUVs	Zhitao Nie (Qingdao University of Science and Technology)*; Xinghai Yang (Qingdao University of Science and Technology); Yaohui Wang (Qingdao University of Science and Technology); Zhenyu Cui (Qingdao University of Science and Technology); Fengxuan Yang (Qingdao University of Science and Technology); Jingjing Wang (Qingdao University of Science and Technology)	会议室 406 Room 406  Chair: Dr. Ye Jiang (Qingdao University of Science and Technology)
	Intelligent Demodulation of Underwater Acoustic Signals Based on a Deeply Fused Neural Network	Yu Wang (Qingdao University of Science and Technology,Shandong Key Laboratory of Deep Sea Equipment Intelligent Networking); Meng Wang (Qingdao University of Science and Technology,Shandong Key Laboratory of Deep Sea Equipment Intelligent Networking); Zhao Liu (Qingdao University of Science and Technology,Shandong Key Laboratory of Deep Sea Equipment Intelligent Networking); Jingjing Wang (Qingdao University of Science and Technology,Shandong Key Laboratory of Deep Sea Equipment Intelligent Networking); Qiuna Niu (Qingdao University of Science and Technology,Shandong Key Laboratory of Deep Sea Equipment Intelligent Networking); Shengwen Gong (Qingdao University of Science and Technology,Shandong Key Laboratory of Deep Sea Equipment Intelligent Networking)*	
	Research on OFDM Underwater Acoustic Communication System Based on Generative Adversarial Network	Shuhui Zhang (Qingdao University of Science and Technology)*; Zhenyu Cui (Qingdao University of Science and Technology); Xinghai Yang (Qingdao University of Science and Technology); Jingjing Wang (Qingdao University of Science and Technology)	

Conference Schedule  
会议日程

5th July Afternoon 7月5日 下午: 分会场报告			
Time	Paper Title	Authors	Venue 地点
14:00 - 16:15	Enhancing Automated Health Literacy Feedback: A Merged-Concept Fine-Tuning Approach with Large Language Models	Donger Chen (University of North Texas); Hang Tran (University of North Texas); Sameep Shah (Texas Christian University); Ying He ( University of North Texas); Yunhe Feng ( University of North Texas); Carol Howe (Texas Christian University); Lindsey Patton (Children's Health); Liran Ma (Miami University); Song Fu (University of North Texas)*	报告大厅 402 Conference Hall 402  Chair: Dr. Lingling Wang (Qingdao University of Science and Technology)
	Effectiveness of the Cybersecurity Training Delivery Method- A Brain-Computer Interface Perspective	Lei Li (Kennesaw State University)*; Maria Valero (Kenneaw State University)	
	Deep Learning-Based Multi-Scale 3D Reconstruction of Porous Media	Yanxia Liu (Qingdao University of Science and Technology)*; Xin Wang (Qingdao University of Science and Technology)	
	A Deep Learning-Based Multimodal Feature Fusion Method For Encrypted Traffic Classification	Yuxuan Jiang (Qingdao University); Hequn Xian (Qingdao University)*	
	An Encrypted Malicious Traffic Detection Method Based on Batch Normalization and Multi-Feature Fusion	Tian Liang (Qingdao University); Hequn Xian (Qingdao University)*	

# Conference Schedule

## 会议日程

5th July Afternoon 7月5日 下午: 分会场报告			
Time	Paper Title	Authors	Venue 地点
14:00 - 16:15	Modulation Recognition Method for Underwater Acoustic Signals Based on Parallel Networks	Tianliang Zhang (Qingdao University of Science and Technology,Shandong Key Laboratory of Deep Sea Equipment Intelligent Networking); Wei Shi (Qingdao University of Science and Technology,Shandong Key Laboratory of Deep Sea Equipment Intelligent Networking)*; Qiuna Niu (Qingdao University of Science and Technology,Shandong Key Laboratory of Deep Sea Equipment Intelligent Networking)	报告大厅 402 Conference Hall 402  Chair: Dr. Lingling Wang (Qingdao University of Science and Technology)
	Improved Memory Network and Knowledge Distillation For Underwater Acoustic Signal Modulation Recognition	Wenxin Liang(Qingdao University of Science and Technology)*; Xin Yan(Qingdao University of Science and Technology); Qiuna Niu(Qingdao University of Science and Technology)	
16:30 - 17:00	颁奖典礼 Award Ceremony		
18:00 - 20:00	晚宴 Banquet		索菲亚国际大酒店 Sophia International Hotel

# Keynote Speakers

## 特邀嘉宾

Title: Service-Centric Data Storage, Security and Robustness



**Abstract:**  
The shared cloud is evolving into an integral part of IT infrastructure. The computing system is transforming from hardware-centric to service-centric solutions, where both data storage and computing are provided as services, which alleviates the need for end-users to purchase expensive hardware equipment. Currently, the majority of user data is stored with just a few centralized cloud data providers, which makes it vulnerable to unauthorized data access, censorship, and security breaches, as well as points of failure. While data encryption may be effective in addressing some security issues, it is unable to subdue the latter issue. As such, an innovative solution is required to ensure secure data storage. This talk will present our research on the design of distributed storage systems. Specifically, we propose a multi-layer parallel data processing infrastructure that can double node repair capability in hostile networks. Alternatively, it can increase the feasible data storage region by 50% in hostile networks.

**Biography:**  
Dr. Jian Ren is a Professor in the Department of Electrical and Computer Engineering at Michigan State University. He received his Ph.D. degree in Communication and Electronic Systems from Xidian University, China. His current research interests include AI security, cybersecurity, distributed data sharing and storage, decentralized data management, blockchain-based e-voting, cloud computing security, and the Internet of Things. He is a recipient of the US National Science Foundation (NSF) CAREER award in 2009. Dr. Ren served as the TPC Chair of IEEE ICNC'17 and General Chair of ICNC'18. He has been the Executive Chair of ICNC since 2019. Dr. Ren has served as an Associate Editor for IEEE Transactions on Mobile Computing and ACM Transactions on Sensor Networks (TOSN), and as Deputy Editor-in-Chief of IET Communications. Currently, he serves as the Editor-in-Chief of IET Communications, Associate Editor of IEEE Internet of Things Journal, and an IEEE VTS Distinguished Lecturer.



## Keynote Speakers

### 特邀嘉宾

#### Title: Towards Explainable LLM Security and Evaluation



##### Abstract:

Recent years have witnessed the rapid advancement of AI, particularly driven by large language models (LLMs), with their applications permeating diverse domains. While LLMs flourish, their escalating challenges in security, privacy, and ethics have attracted significant concern. Ensuring the security and privacy of LLM systems while developing trustworthy, responsible AI technologies has become both a foundational prerequisite and essential safeguard for their sustainable application and industrial deployment. This talk focuses on LLM system security, discusses explainable techniques for enhancing LLM security, and presents a developed LLM security evaluation platform.

##### Biography:

Shouling Ji is a Qiushi Distinguished Professor in the College of Computer Science and Technology at Zhejiang University. He received a Ph.D. degree in Electrical and Computer Engineering from Georgia Institute of Technology, and a Ph.D. degree in Computer Science from Georgia State University. His current research interests include AI Security, Software and System Security, and Data-driven Security and Privacy. He is a member of ACM and IEEE, a senior member of CCF and was the Membership Chair of the IEEE Student Branch at Georgia State University (2012-2013). He was a Research Intern at the IBM T. J. Watson Research Center. Shouling is the recipient of the 2012 Chinese Government Award for Outstanding Self-Financed Students Abroad and 10 Best/Outstanding Paper Awards, including IEEE S&P 2025 Distinguished Paper Award and ACM CCS 2021 Best Paper Award.

## Keynote Speakers

### 特邀嘉宾

#### Title: A Lightweight Deep Learning Solution to mmWave Human Activity Recognition



##### Abstract:

Millimeter wave (mmWave) based human activity recognition is vital in many smart IoT applications. In practical IoT scenarios, fast and accurate human activity recognition is critically important. In this talk, we talk about a lightweight deep learning solution to human activity recognition based on the discrete Fourier transformation. The model has a fairly small number of model parameters while offering high accuracy in activity recognition. The core of the solution is a discrete Fourier transform module inside a neural network, which converts the temporal features of mmWave radar activity data into frequency features before a simple classifier performs activity recognition. The evaluation demonstrates that the DFT-based network can achieve the same accuracy as other traditional neural network models, but with a very small computational load.

##### Biography:

Dr. Shaoen Wu is the Department Chair and a full professor of Information Technology at Kennesaw State University. He also serves as a Steering Committee Chair of IEEE MMTC. Dr. Wu worked as the State Farm Endowed Chair Professor in the School of Information Technology at Illinois State University, served on the Advisory Council of Scholarship for the Vice Provost for Research, the Dean's Faculty Advisory Board and the assistant department chair of computer science at Ball State University, also worked as an assistant professor in the School of Computing at the University of Southern Mississippi, a Staff Scientist at ADTRAN, and a Member of Technical Staff at Bell Labs, Lucent Technologies. He has been a General or TPC Chair for several international conferences, including the CSM of Globecom 2021. Dr. Wu has directed research projects of several million dollars funded by US federal agencies and industry.

## Keynote Speakers

### 特邀嘉宾

#### Title: A Succinct Range Proof for Polynomial-based Vector Commitment

##### Abstract:

A range proof serves as a protocol for the prover to prove to the verifier that a committed number lies in a specified range, such as  $[0, 2^n)$ , without disclosing the actual value. Range proofs find extensive application in various domains. To improve the scalability and efficiency, we propose MissileProof, a vector range proof scheme, proving that every element in the committed vector is within  $[0, 2^n)$ . We first reduce this argument to a bi-to-univariate SumCheck problem and a bivariate polynomial ZeroTest problem. Then generalizing the idea of univariate SumCheck PIOP, we design a bi-to-univariate SumCheck PIOP. By introducing a random polynomial, we construct the bivariate polynomial ZeroTest using a univariate polynomial ZeroTest and a univariate polynomial SumCheck PIOP. Finally, combining the PIOP for vector range proof, a KZG-based polynomial commitment scheme and the Fiat-Shamir transformation, we get a zero-knowledge succinct non-interactive vector range proof.



##### Biography:

Dr. Huaqun Wang is a full professor of Nanjing University of Posts and Telecommunications. He also serves as a director of Jiangsu Cryptography Technology Engineering Research Center. His research interests include applied cryptography, data security, blockchain, and cloud computing security.

## Keynote Speakers

### 特邀嘉宾

#### Title: Full-duplex Underwater Magnetic Induction Communication: Opportunities and Challenges

##### Abstract:

This research focuses on Magnetic Induction (MI) communication and discusses the challenge of meeting high data rate demands as interest in MI-based underwater applications grows. The data rate in MI communication is limited by the use of a low operational frequency in generating a quasi-static magnetic field. In this research, we propose the use of full-duplex (FD) MI communication to efficiently utilize the available bandwidth and instantly double the data rate. We propose a two-dimensional (2D) transceiver architecture to enable full-duplex communication by leveraging the directional nature of magnetic fields. We further evaluate the proposed end-to-end FD MI communication against self-interference (SI), its impact on communication distance, and orientation sensitivity. Finally, we conclude by discussing and highlighting the potential future research directions.



##### Biography:

Muhammad Muzzammil received the DEng degree in Information and Communication Engineering from the College of Underwater Acoustic Engineering, Harbin Engineering University (HEU), China in 2021. He received the Best Poster Award at the 13th ACM International Conference on Underwater Networks & Systems (WUWNet' 18) and is also being selected in the IEEE OES Student Poster Competitions (OCEANS'19 & OCEANS' 23). He previously worked as a visiting scholar at Hamad Bin Khalifa University, Doha, Qatar, and as a remote intern at the Information Systems Lab (ISL), King Abdullah University of Science and Technology, KSA. Currently, he is working as a postdoctoral researcher at HEU, China. His research interests lie in the areas of wireless communications, magneto-inductive communication, and underwater acoustic communication and networking.



# Venue Information

## 会场信息

### 1. Venue Location 会场地点:

Conference hall 402 (main venue), and conference room 406 (parallel sessions),  
D2 Building, Qingdao University of Science and Technology, No.99 Songlingsongling Rd,  
Laoshan District, Qingdao, Shandong Province, China

山东省青岛市崂山区松岭路99号青岛科技大学D2楼会议大厅 402 (主会场), 会议室 406 (分会场)

### 2. Conference Date 会议日期:

July 5th, 2025

2025年7月5日

### 3. Registration 会议报道:

- 1) Registration Time 报道时间: July 4th-5th, 2025. 2025年7月4-5日
- 2) Registration Desk 报道地点: Conference hall 402 会议大厅402
- 3) Registration Program 报道程序: Registration 注册签到 —— Onsite payment 缴费  
(or receipt collection if paid 或领取发票) —— Package Collection 领取资料

### 4. Accommodation 住宿酒店:

青岛索菲亚国际大酒店 (山东省青岛市崂山区香港东路217号)

Qingdao Sophia Internation Hotel (No.217 Hongkong East Rd, Laoshan District, Qingdao,  
Shandong Province, China)

Website: <http://sophiainternational.hotelqingdao.cn/>

### 5. Attending 交通路线指南:

- 1) 火车到达 (公共交通): 青岛北站出站后乘坐地铁3号线往青岛站方向4站, 到达李村站转  
2号线四川路 (渡轮) 方向6站, 到达苗岭路转蓝谷快线往钱谷山方向  
3站至青岛科大站, 步行900米, 资费4元
- 2) 火车到达 (出租车): 网约车约35元
- 3) 飞机到达 (公共交通): 青岛胶东国际机场 (国内到达) 乘坐8号线往青岛北站方向9站, 到达  
青岛北站后如方案1) 进行换乘, 资费7元
- 4) 飞机到达 (出租车): 网约车约100元

### 6. Conference Information 大会会务信息:

Please scan the bar-code for more information

参会代表请加入大会微信群, 微信群二维码:



明德 笃学  
弘毅 拓新

