

The 6th International Conference on Informatics Engineering & Information Science (ICIEIS 2024)

May 17-19, 2024 / Shenzhen, China

On behalf of the organizing committee, we warmly invite you to participate in the 6th International Conference on Informatics Engineering & Information Science (ICIEIS 2024) which will be held in Shenzhen, China during May 17-19, 2024.

The previous conference of ICIEIS took place in Malaysia (2011 & 2013), Poland (2014), Tianjin (2021) and Shenzhen (2022) successfully. ICIEIS is a leading annual conference of informatics engineering and information science for researchers around the world. Known for its strong leadership team and dependable reputation, ICIEIS has a wide network of sponsors and supporters globally. The 2024 edition of this special conference has raised the bar again for the informatics and the engineering professional field, and every participant is invited to contribute on this exciting platform, sharing research findings and insights as well as generating new ideas to help advancing the forefront of technology.

The blend of unique perspectives and experiences makes for energetic discussions and exchange of ideas. It's not just the speakers that share their knowledge. Every participant of ICIEIS 2024 is welcomed and expected to contribute. Share your research findings, pose questions, and generate new ideas!

主办单位



中国科学院深圳先进技术研究院
SHENZHEN INSTITUTE OF ADVANCED TECHNOLOGY
CHINESE ACADEMY OF SCIENCES

协办单位



承办单位



Conference Program

| Date | Time (Beijing Time) | Program | Place | Online Platform |
|---------------------------|---------------------|-------------------------------------|----------------|--|
| Friday, May 17, 2024 | 14:00-18:00 | Registration & Preparation | Block B, Lobby | VOOV Meeting (腾讯会议): 575-7236-8740  |
| Saturday, May 18, 2024 | 9:00-9:10 | Opening Ceremony | Block B, B200 | |
| | 9:10-10:40 | Keynote Speech | | |
| | 10:40-11:10 | Poster & Group Photo & Coffee Break | | |
| | 11:10-11:40 | Oral Presentation | Block D, D6 | |
| | 12:00-14:30 | Lunch | | |
| | 14:30-16:15 | Oral Presentation | Block B, B200 | |
| | 16:15-17:30 | Parallel Sessions & Poster | | |
| | 17:30 | Dinner | Block D, D6 | |
| Sunday, May 19, 2024 | 8:30-17:00 | Academic Visit and Exchange | | |

Part I: Opening Ceremony

9:00-9:10 Block B, B200
VOOV meeting (腾讯会议): 575-7236-8740

9:00-9:10 Opening Ceremony by Prof. Guanglin Li



Prof. Guanglin Li

Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences (SIAT-CAS), China

Professor Li is the director of the Key Laboratory of Human-Machine Intelligent Collaboration System, Chinese Academy of Sciences, and the director of the Institute of Integrated Technology, Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences (SIAT-CAS). In 2009, he returned to China to be fully engaged in biomimetic rehabilitation robot, human-machine intelligent enhancement and interaction and other research. His research direction is human-machine intelligent interaction, neural rehabilitation engineering, rehabilitation robots and information processing and instrument of biological medicine.

Part II: Keynote Speech

9:10-9:40 Block B, B200
VOOV meeting (腾讯会议): 575-7236-8740

9:10-9:40 Keynote Speech by Yinqiang Zheng



Prof. Yinqiang Zheng

Graduate School of Information Science and Technology, the University of Tokyo, Japan

Speech Title: Physical Adversarial Attacks on Visual AI beyond RGB Domain

Abstract: AI algorithms for computer-based visual understanding have advanced significantly, due to the prevalence of deep learning and large-scale visual datasets in the RGB domain, which have also been proven vulnerable to digital and physical adversarial attacks. To deal with complex scenarios, many other imaging modalities beyond the visibility scope of human eyes, such as near infrared (NIR), thermal infrared (TIR), polarization, have been introduced, yet the vulnerabilities of visual AI based on these non-RGB modalities have not received due attention. In this talk, we will show that typical AI algorithms, like object detection and segmentation, can be more fragile than in the RGB domain. We showcase two physical attackers onto the YOLO-based human detector in the NIR and TIR domain, and one projection-based attacker onto the glass segmentation algorithm in the polarization-color domain, all of which are sufficiently concealing to human eyes.

9:40-10:10 Keynote Speech by Yimin Zhou



Prof. Yimin Zhou

Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences (SIAT-CAS), China

Speech Title: Overview of Technologies and Applications Related to Drone Swarm System

Abstract: This speech will outline the basic principles, concepts, and typical applications of drone swarm consensus planning (including coordinated perception, formation control, and swarm path planning), swarm adaptive task allocation, swarm air-ground coordination, and swarm patrol scheduling. The aim is to provide readers with a clear understanding of drone swarm-related technologies.

10:10-10:40 Keynote Speech by Chi Man VONG, Matthew



Prof. Chi Man VONG, Matthew

Associate Head of Department of Computer and Information Science (CIS), University of Macau, China

Speech Title: Visual SLAM under practical extreme environments

Abstract: In autonomous driving and mobile robots, visual SLAM is one of the key technologies containing two important parts: Frontend Odometry and Backend Optimization. In this talk, a frontend Visual-Inertial Odometry for Low-Texture Environment called DDIO-Mapping will be presented, which effectively extracts the grayscale and RGB features from the RGB-D frame and balances them with a filtering and selection strategy, followed by efficient inter-frame matches by minimizing the reprojection error. Next, a Visual Place Recognition under variational views for SLAM backend loop-closure and global localization will be presented, which employs a multi-view encoder and a Hierarchical View Retrieval (HVR) module optimized under a novel Enhanced Ranking Feedback Average Precision (ERFA) Ranking-based loss function. Experimental results show that both methods can effectively improve the SLAM performance under extreme conditions.

Part III: Poster Presentation

10:40-11:10; 16:15-17:30 Block B, B200

VOOV meeting (腾讯会议): 575-7236-8740

| Presenter | Affiliation | Presentation Title |
|-----------------------|---|---|
| Chi Man VONG, Matthew | University of Macau, China | SFENet: Semantic Fusion and Enhancement based Multi-level Hybrid Hierarchical network for Vehicle Re-identification |
| Chi Man VONG, Matthew | University of Macau, China | Error-state Kalman Filter based RGBD Direct Depth-Inertial Odometry and Mapping |
| Chi Man VONG, Matthew | University of Macau, China | FlexPRNet: a Flexible and Effective Network for Place Recognition Using Different Sensor Modalities |
| Zhuoxin Wang | University of Macau, China | A multi-scale feature fusion network for UAV visual place recognition |
| Huilin Ding | Huazhong University of Science and Technology, China | Pedestrian Attribute Distillation Fusion Model |
| Yongkang Yang | Xidian University, China | Design of miniaturized detection circuit for FET sensing and detection |
| Xuyang Wang | Xidian University, China | Research and design of a charge-to-voltage modulation circuit based on piezoelectric effect |
| Dong Wang | Tianjin Institute of Aerospace Mechanical and Electrical Equipment, China | Load prediction design based on DWR-Informer improved modeling |
| Zixuan Chen | Wuhan University of Science and Technology, China | Design of an Insulin Dosage Recommendation System for Type 1 Diabetes Patients: Integration of Composite Neural Network Predictions and Fuzzy PID Control |
| Zhongjin Zhang | The Second Research Institute of CAAC, China | A Reverse Link Transmission Signal Generating Method for L-band Digital Aviation Communication System (L-DACS1) |
| Maximilián Strémy | Slovak University of Technology in Bratislava, Slovakia | Use of blockchain mechanisms in PLC control and safety critical processes |
| Yuzhou Gong | Huazhong University of Science and Technology, China | AM-SCNet: Activation Mask Sparse Convolutional Network for Skeleton-based Action Recognition |
| Hongyu Duan | Zhengzhou University of Light Industry, China | Island Algorithm Enhanced with Reinforcement Learning |
| Junyu Shen | Shanghai Normal University, China | Adaptive Scale-Tuned Transformer: Extrapolating the context window of LLMs through adaptive attention scale |
| Jia Zhao | Shandong University, China | A deep learning framework for smooth pursuit eye movement-based Parkinson's disease diagnosis |
| Yujie Nie | Shandong University, China | Diagnosis of Parkinson's disease based on machine learning model using Eye Tracking |
| Wenkong Wang | Shandong University, China | CNN and Cross-Attention Mechanism based Surface Electromyography Gesture Recognition |
| Chaofan Li | Hunan University of Science and Technology, China | A Model Predictive Control Method for Frequency Regulation Considering the Terminal Control |

Part III: Oral Presentation

11:10-11:40; 14:30-16:15 Block B, B200
VOOV meeting (腾讯会议): 575-7236-8740

| Time | Speaker | Affiliation | Speech Title |
|-------------|-----------------|--|---|
| 11:10-11:25 | Babak Shiri | Neijiang Normal University, China | Logistic activation function with free parameters in NN |
| 11:25-11:40 | Juan Wang | Shenyang Jianzhu University, China | Fuzzy adaptive neural network control of space manipulator with input dead zone |
| 14:30-14:45 | Xinzhan Hong | Xidian University, China | Effective Path Planning in Dynamic Environments: A Deep Reinforcement Learning Approach with Parametric Noise |
| 14:45-15:00 | Yexing Yang | Xidian University, China | Graph Neural Network-Based Three-Dimensional Stress Prediction |
| 15:00-15:15 | Chengbao Lv | Xidian University, China | Simulation system for wet etching of quartz beam structures based on the mask method |
| 15:15-15:30 | Shuanqiang Song | Xidian University, China | Construction of quartz crystal etching rate database based on Hubbard interpolation method |
| 15:30-15:45 | Jie Yang | Xidian University, China | Design and Optimization of High Linearity Quartz MEMS Resonator |
| 15:45-16:00 | Zhiye Wei | LiaoNing Petrochemical University, China | Research on adversarial sample generation algorithm based on synonym replacement |
| 16:00-16:15 | Caiyun Liu | Jiangsu JARI Information Technology Co., Ltd., China | Research on Air Pollution Prediction of Ship Field Painting Based on CNN-LSTM |

Conference Venue

Venue: The Shenzhen Institutes of Advanced Technology (SIAT) of the Chinese Academy of Science (CAS)
中国科学院深圳先进技术研究院

Address: 1068 Xueyuan Avenue, Shenzhen University Town, Shenzhen, P.R.China
广东省深圳市南山区西丽大学城学苑大道 1068 号

Traffic Guide: 1. From Shenzhen Bao'an International Airport to SIAT
About 18 minutes by taxi, about RMB 27
2. From Railway Station to SIAT
Shenzhen Railway Station (24km) / Shenzhendong Railway Station (22km) /
Futian Railway Station (16km) / Shenzhenxi Railway Station (19km) /
Xili Railway Station (9km)

Contact Us

Website: <http://www.icieis.com/>

Email: icieis@pasanhu.com

Tel.: +86-15697142092

+86-18910136243