國立中正大學 National Chung Cheng University

國立中正大學 National Chung Cheng University
資訊工程學系暨研究所
Computer Science and Information Engineering

2 PhD positions open for 2025 Fall semester

Fully-funded scholarship covers up to 4 years

Project overview: The integration of 6G heterogeneous networks with smart contract (SC)-enabled personalized applications and services necessitates robust frameworks for ensuring trust and detecting misbehavior among participants. A scalable approach combining misbehavior detection and federated learning (FL)-based trust verification offers a promising solution. Misbehavior detection leverages advanced anomaly detection and multimodal learning to identify malicious activities from rich data sources, while robust FL enables decentralized trust evaluation across multiple data sources without compromising privacy. This framework is particularly relevant for applications like healthcare, autonomous vehicles, and industrial IoT in smart cities. However, challenges such as adversarial resilience, computational efficiency, scalability, and privacy concerns in Internet of Everything environments must be addressed to ensure effective deployment.

Research focus: The selected candidates for this position will explore cutting-edge methodologies leveraging advanced AI techniques (transformer, quantum machine learning, federated learning, multimodal/incremental learning) to enhance digital services in smart cities and 6G environments. The research will focus on three main areas:

1) Designing multimodal misbehavior detection in interconnected applications
2) Developing robust AI solutions to strengthen security in smart city networks
3) Implement the solutions on O-RAN B5G/6G testbeds (USRP, OAI)

Benefits and scholarship cover:

- Tuition fee and accommodation of waiver up to 4 years
- Stipend: tax-free 20,000 NTD /month (with potential increases based on performance),
- Full cover for international conference attendance

Requirements: Candidates should hold, or be on track to complete by August 2025, a Master's degree in Telecommunications or Computer Science/Electrical engineering, or a related field. Candidates with strong background in networking/security, mathematics, optimization, quantum are highly encouraged.

Application materials: Please check the official website for details

Deadline (AoE): March 15, 2025

The selected candidate will enroll in the PhD program within the Department of Computer Science and Information Engineering at the College of Engineering, National Chung Cheng University (CCU), Chiayi, Taiwan and work with Prof. Van-Linh Nguyen's research group. CCU is recognized as a leading research-focused institution in Southern Taiwan. The CCU campus has been recognized as the most beautiful campus in Taiwan, according to Yahoo Taiwan. TSMC's two new chip packaging fabs for AI chips will be also in Chiayi.

How to apply: Please submit your materials as per guideline at CCU Office of International Affairs

Pre-screening inquiry: Please prepare a ZIP-compressed file containing all necessary application materials, including your curriculum vitae, transcripts (BSc/MSc), degree certificates (Bachelor/Master), English proficiency certificate, publications, and any additional documents supporting your qualifications. Send the combined file to the host Prof. Van-Linh Nguyen at nvlinh@ccu.edu.tw, ensuring the email subject is marked as "**Application for 2025 Fall - CCU/CSIE PhD SHIELD**".