# Mr. Hanlin CAI

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## EDUCATION

**Fuzhou University (FZU) (China-Ireland Cooperative Program, Full Time at FZU)**   Sep. 2020 - June 2024

*Bachelor of Engineering in Automation (Fuzhou University)*

*Bachelor of Science in Robotics and Intelligent Devices (Maynooth University, Combined Degrees)*

- **CGPA** 3.79/4.00 (Top 10%)
- **Main Courses:** Digital Systems (91/100), System and Control (90/100), Operating System (92/100), Algorithms and Data Structures (90/100), Object-Oriented Programming (90/100), Mathematics (90/100)
- **Course Projects:** Robotics Skills Project (87/100), Signals and Systems Integration Project (92/100)
- **Scholarships:** China National Scholarship (Nominated, Top 1%), First Prize Scholarship (Top 1.72%, Four Times) of FZU, Third Prize Scholarship (Top 17.2%, One Time), Best Student Project (Top 5%)

## RESEARCH PROJECTS

**Member, RIGMS Testbed for IoT Cybersecurity Research Using Machine Learning Based Approach**

Organized by the Cambridge Centre for the Integration of Science, Technology and Culture, virtually hosted at St. John's College, University of Cambridge

*Supervisor: Prof. Pietro Liò*                                                July 2022 - Present

- Responsible for the establishment and improvement of the Real-time Intelligent Garbage Monitoring System (RIGMS) Testbed for IoT cybersecurity research;
- Master basic machine learning algorithms, further explore the design of IoT cybersecurity algorithms, and apply machine learning approaches to prevent IoT multiple-mix-attacks;
- Until to now, have obtained a series of experimental data, and carried out corresponding data preprocessing, preliminary result analysis, and algorithm evaluation;
- Expect to complete the final manuscript in March 2023.

**Group Member, An IoT Garbage Monitoring System for Effective Garbage Management**

Organized by Maynooth International Engineering College, Fuzhou University

*Supervisor: Dr. Chin-Hong Wong*                                        March - Aug. 2022

- Took charge of the software and hardware interface part of the IoT Monitoring System, thousands of lines of high-quality and efficient code writing, and the technical documentation preparation of this system;
- Grasped the comprehensive knowledge of IoT systems and learned how to connect software with hardware and how to use cloud computing to process IoT-generated data, etc.;
- Penned a paper named An IoT Garbage Monitoring System for Effective Garbage Management and will report on this research project as a presenter at IEEE CENIM in November 2022.

## PUBLICATIONS

**First Author,** *Deep Residual Neural Network for Efficient Traffic Sign Detection*

- Accepted by 28th International Conference on Artificial Life and Robotics.

**First Author,** *An IoT Garbage Monitoring System for Effective Garbage Management*

- Accepted by 4th International Conference on Computer Engineering, Network and Intelligent Multimedia.

**First Author,** *RIGMS Testbed for IoT Cybersecurity Using Machine Learning Based Approach*

- Working paper, still under working and expect to be finalized in March 2023.

## INTERNSHIP

**IT Intern, Daotian Xingguang Cultural Creativity Co., Ltd. Quanzhou, China**

*Supervisor: Xincheng Hong (Doctoral Candidate)*                          Jan. 12 - Aug. 28, 2021

- Assisted the leader in carrying out 12 new media projects and organizing on-site activities;
- Responsible for some new media work such as UI design modeling, image beautification, video rendering, audio editing, etc., and produced 7 works in total;
- Participated in the operation of on-site activities, including the construction of technical scenarios in the early stage and settlement of various unexpected problems in the activity process;
- Organized user experience feedback at the later stage of activities and analyzed and sorted out 796 questionnaires in total to help improve user experience and the company's product competitiveness.

## STUDENT WORK

**Deputy President, Volunteer Department, Fuzhou University Youth League Committee**

*Supervisor: Dr. Yixuan Hu*                          Sep. 2021 - Sep. 2022

- Took charge of the planning, operation, and publicity of Fuzhou University's volunteer service work, and helped instructors to promote the improvement, digitization and intelligence of Fuzhou University's volunteer service management;
- During the period, organized 39 activities (19 volunteer activities for epidemic prevention and control, 12 for community service, and 8 for environmental protection) with over 890 participants in related activities;
- Responsible for the publicity work of 17 volunteer activities, with a total of more than 240,000 page views, covering more than 40,000 people;
- Personal volunteer service time exceeded 240 hours.

## SKILLS

**CET 6**: 475                          June 2021
**CET 4**: 593                          Dec. 2020
**Tech Skills**: MATLAB, Java, Python, HTML, CSS, LaTeX, Git, EndNote
**Specialty**: Swimming (Reach China National Second-level Swimmer Standard, Champion of 100-meter Freestyle Swimming Competition of Fuzhou University)                          June 2022

## AWARDS & HONORS

First Prize (Fujian Competition Area) in China Undergraduate Mathematical Contest in Modeling.     Dec. 2022
Maynooth International Engineering College Best Student Project in Academic Year 2021/2022 (Top 8%, **Only One Team** in the Major)                          Oct. 2022
Third Prize (Top 5%, **Only One Team** in Fuzhou University) in China National College Student Computer Design Competition                          Aug. 2022
Second Prize (Top 10%) in Fujian College Student Computer Design Competition                          June 2022
Third Prize (Top 15%) in the 2022 Mathematical Modeling Competition of Fuzhou University     June 2022
Third Prize (Top 20%, Short Videos Group) in National College Student New Media Competition     May 2022
Excellent Prize (Top 30%) in "The World of English" National College English Vocabulary Contest   Feb. 2022
Merit Student of Fuzhou University                          May 2021
Top 10 Best Volunteers of Fuzhou University                          April 2022
Excellent Volunteer in the 44th Session of the World Heritage Committee                          July 2021
Excellent Volunteer in the 4th Digital China Summit                          April 2021