**Lingyu Gong**

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**EDUCATIONAL BACKGROUND**

**Trinity College Dublin Dublin, Ireland**

Postgraduate Degree Programme 09.2023-Present

* **Programme: MSc** Electronic Information Engineering
* **GPA:** 66/100
* **Coursework:** Algorithms for Quantum Computing, Integrated Systems Design, Self Organising Technological Networks, Open Reconfigurable Networks, Deep Learning and Its Applications, etc.

**Capital Normal University Beijing, China**

Undergraduate Degree Programme 09.2019-06.2023

* **Programme: BSc** Computer Science and Technology (Education)
* **GPA:** 3.51/5.0
* **Coursework:** Operating Systems, Digital Logic Circuits, Principles of Compilation, Principles of Computer Composition, EDA and its Practice, Computer Network Principles, etc.

**GRADUATION PROJECTS**

**Enhancing NoC Network Predictions with Advanced AI Techniques**  **Dublin, Ireland**

Project Holder/Researcher 12.2023-5.2024

* Enhanced NoC parameter prediction using AI, improving network design and optimization.
* Simulated NoC scenarios with Booksim2 on Linux, generating rich datasets for model training.
* Conducted data cleansing, feature selection, and applied linear regression models for performance prediction.
* Trained and validated models against Booksim2 simulations.
* Configured and managed project workflows in a Linux containerized environment.

**Research on Open Source NoC Based on Intelligent Routing Algorithm**  **Beijing, China**

Project Holder/Researcher 8.2022-5.2023

* Researched NoC topologies, routing algorithms, and open-source NoC generators.
* Implemented and analyzed the XY routing algorithm using OPNET software.
* Studied and validated open-source NoC generators like OpenSoC Fabric, OpenSMART, and Constellation.
* Self-learned Linux for Constellation simulations, gaining hands-on experience with Linux tools and environments.

**SELECTED RESEARCH PROJECTS**

* **Laboratory Swipe Card Notation System:** Designed an intelligent laboratory card system for efficient personnel registration and management using hardware and software integration. Conducted PCB design and used magnetic cards, RFID, LED display, buzzer, and ESP8266 for implementation, including system integration and testing.
* **3D Modeling Course Design & Research:** Led the design of a 3D modeling course using Rhino and AI technologies to enhance learning. Explored AI-assisted modeling, such as optimizing topology, generating textures, and predicting design trends, to improve efficiency and creativity.
* **Data Restoration Using Protection Cards:** Learned computer configuration, protection card usage, and computer room management. Contributed to project summary, final presentation, and concluding defense.

**SELECTED MEANINGFUL COURSEWORK**

**Undergraduate Studies in Computer Network Principles** 5.2022-2.2022

* Gained foundational knowledge of computer networks, including key protocols like TCP/IP, HTTP, and TLS.
* Used Wireshark for packet capture and analysis, acquiring hands-on experience in network traffic monitoring and protocol analysis.
* Conducted detailed analysis of network data to understand packet structures, communication protocols, and network behavior.

**Open Reconfigurable Networks Course** 2.2024-5.2024

* Studied SDR, SDN, network centralization, and programmability, focusing on SDN concepts, OpenFlow, SDN controllers, and Network Function Virtualization.
* Completed hands-on experiments using VirtualBox, Ubuntu, and Mininet:
  + Experiment 1: Created and modified complex Mininet topologies using Python, ran tests with the Mininet Python API, and implemented SDN and OpenFlow operations for managing TCP/IP switch tables.
  + Experiment 2: Linked an external controller to Mininet Optical, developed a simple OpenFlow controller with POX, constructed a tree topology for Layer 2 forwarding and firewall functions, and applied QoS rules using queues and meters.
* Gained practical experience in network virtualization, OpenFlow operations, and SDN controllers, enhancing knowledge of network infrastructure and protocols.

Continued

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**PROFESSIONAL TRAINING**

**Institute of Computing Technology, Chinese Academy of Sciences**  **Beijing, China**

Visiting Student 08.2022-05.2023

* Responsible for researching and implementing NoC modules, organizing project materials, attending group meetings, and participating in the relevant discussions regularly
* Enhanced information system development and programming skills and collaboration/problem-solving capacities

**Massachusetts Institute of Technology**  **Boston, United States**

Engineering, Design, Gaming and Entrepreneurship (EDGE) Program for STEM 08.2022-05.2023

* Studied the entire process of game making systematically, such as determining the users for the game, defining the meaning of making the game, determining the type and presentation, and building a system model
* Grasped the application of Tale Blazer and APP Inventor in game design and development
* Designed and developed a physics history popular science story game for all ages within the team

**INTERNSHIP EXPERIENCES**

**The Auld Dubliner**  **Dublin, Ireland**

Part-time Bartender 01.2023-04.2024

* Integrated into the local community by interacting with customers and colleagues, enhanced social skills and practice English extensively, and improved English communication skills significantly
* Developed strong independent and self-reliant skills through managing work and personal responsibilities, enhanced capacity to handle stress in a fast-paced work environment, and gained valuable experience in social interactions and cultural exchange with local residents

**Capital Normal University High School**  **Beijing, China**

Trainee IT Teacher 09.2022-11.2022

* Prepared and taught IT lessons (C++) to junior middle school students, as well as utilised a range of educational technologies and visual communication techniques to support the design of online training materials
* Designed and delivered IT courses according to the syllabus and students' actual situation, and ensured the accuracy and timeliness of the teaching content
* Engaged in students' innovative club activities to enhance their IT learning enthusiasm, formulated personalised learning plans for students in line with their learning progress, and provided targeted guidance and assistance

**SELECTED AWARDS & COMPETITIONS**

**Beijing, China**

* Title of Outstanding Graduation Thesis, 2023
* Beijing Merit Student, 2021-2022 Academic Year
* University-level Merit Student/Major First Class Scholarship, 2021-2022 Academic Year
* Major 2nd Class Scholarship, 2019-2020 Academic Year

**Dublin, Ireland**

* Irish Badminton Intervarsities Champions, 2023-2024 Academic Year
* Student Sport Ireland Badminton Cup Champions, 2023-2024 Academic Year
* Student Sport Ireland Badminton League Champions, 2023-2024 Academic Year

**LEADERSHIP & EXTRACURRICULAR ACTIVITIES**

* Beijing Winter Olympics Volunteer Regional Chief PROFESSIONAL, 2022
* Beijing Winter Paralympics KMS/BMS Mock Athlete, 2022
* President of the Student Union, Capital Normal University, 2020-2023

**OTHER SKILLS & SELF-EVALUATION**

* **Languages:** Mandarin (Native), English (Fluent)
* **Athletics:** Badminton National Level Athlete
* **Software Skills:** Proficient in C++, C, Verilog, Matlab, Python, MS Office, etc.

**STRENGTHS & SELF-EVALUATION**

* **Strong Learning Ability:** Be able to quickly grasp new concepts and skills, which can be seen through consistent academic and professional developments/achievements
* **Optimistic and Positive:** Possess a positive attitude and approach challenges with optimism and enthusiasm
* **Intercultural Communication Skills:** Effective in verbal and written communications with proficiency in both English and Chinese
* **Core Team Player:** Enjoy working collaboratively and contributing to team success, while also being capable of working independently and effectively