Xiao Yan

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Personal Website

Education

University of Texas at Dallas   08/2024 – Present

Ph.D. in Computer Science, Systems Track

- Research Focus: Mobile Computing
- Relevant Coursework: Computer Architecture(A), Distributed Computing Systems, Real-Time System

Imperial College London   10/2022 – 10/2023

M.Sc. Applied Computational Science & Engineering with Merit

- Coursework: Advanced Programming(A), Modern Programming Methods(B), Numerical Methods(B), Applying Computational Science(B), Inversion and Optimization(B)

University of Birmingham   08/2019 – 07/2022

B.Sc. Computer Science with Honours, Class I

- Coursework: Data Structure & Algorithms (96), Logic & Computation (86), Systems Programming in C/C++ (98), Programming in Java (98), Functional Programming (96), Evolutionary Computation(87)

Research Experience

Efficiency of LLM Applications on Mobile Devices   01/2025 – 03/2025

The University of Texas at Dallas

- Conducted a comprehensive measurement study to evaluate efficiency tradeoffs between mobile, edge, and cloud deployments for LLM applications
- Implemented AutoLife-Lite, a simplified LLM-based application that analyzes smartphone sensor data to infer user location and activity contexts
- Paper titled "Are We There Yet? A Measurement Study of Efficiency for LLM Applications on Mobile Devices" accepted at the 2nd International Workshop on Foundation Models for Cyber-Physical Systems & Internet of Things (FMSys '25)
- Discoveries included limitations of on-device LLMs, performance trade-offs with model compression, and latency considerations across different deployment strategies

Wind Farm Layout Optimization Project   06/2023 – 09/2023

Imperial College London

- Conducted a study evaluating the performance of optimization algorithms including GA (Genetic Algorithm), GHA (Greedy Heuristic Algorithm), and RS (Random Search) for large-size wind farm layout optimization.
- Validated and selected the GA for its effectiveness in solving the complex planning problem of wind farm layout.
- Investigated the influence of neighboring wind farms on performance and the impact of wind speed on this interaction.

The Chatbot with a Camera Detecting Facial Impressions   09/2021 – 03/2022

University of Birmingham

- Developed a chatbot capable of responding appropriately based on the interlocutor's facial expressions and text input
- Implemented and combined several deep learning models, such as CNN (convolutional neural network) and LSTM (Long short-term memory)
- Designed and built the chatbot software based on Mac OS

Text Humor Detector   07/2021 – 09/2021

Imperial College London

- Developed a text humor level evaluation system for news headlines under the supervision of Professor Lucia Specia
- Implemented RNN (recurrent neural network) models for the natural language processing (NLP) modules of the system
- Curated more than 9,000 news headlines and constructed a dataset for model training and evaluation

Project Experience

Current Research in CPS-IoT Systems   01/2025 – Present
University of Texas at Dallas
- Investigating optimization techniques for resource-constrained IoT devices in smart environments
- Developing novel approaches to improve security and privacy in interconnected cyber-physical systems
- Exploring applications of machine learning algorithms for predictive maintenance in IoT networks

Video Game Design and Development in Java   03/2021 – 05/2021
Team Leader | Java, Game Design
- Led a team of 8 to develop a game named 'Blueland Defenders' based on Java
- Designed the software architecture for the game, implemented the game AI module, proposed ideas for the game theme
- Implemented the path planning modules using A* and Flood-Fill algorithms, optimized the collision detection algorithms for game AI
- Managed the project in agile development strategy, tracked progress and organized information sync meetings

QShop: A Community-Focused Delivery System for Self-isolating Users   09/2020 – 12/2020
Lead Developer | Java
- Designed and developed a mobile application focusing on delivery services for people in self-isolating
- Surveyed and investigated user needs, depict user portraits, and use scenarios
- Designed the software architecture, including backend, frontend, and deployment pipelines
- Prototyped the user interfaces and designed user showcase, made introduction videos

Teaching Experience

University of Texas at Dallas   08/2024 – Present
Graduate Teaching Assistant
- Assisting undergraduate students with programming assignments and laboratory sessions
- Conducting tutorial sessions and providing one-on-one guidance to students
- Grading assignments and providing constructive feedback to improve student performance

Previous Academic Roles   2021 – 2023
Research Assistant | Junior High School Teacher Assistant | Tutorial/Session Organizer
- Facilitated learning through innovative teaching methods and interactive sessions
- Provided academic support and mentorship to students at various educational levels

Technical Skills

Programming Languages: Python, Java, C/C++, JavaScript
Technologies: TensorFlow, PyTorch, IoT frameworks, Embedded Systems
OS: Windows, macOS, Linux
Version Control: Git
Tools: LaTeX, Microsoft Office, MATLAB
Languages: Mandarin (native), English (Proficient)