Guohuan Feng

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EDUCATION

Oakland University (OU) – Rochester, MI **September 2023 – Present**

B.S. in Computer Science; GPA: 3.97/4.0; Expected graduation: May 2025

Core Courses: *Programming Languages* (A), *Adv Web Design Application* (A), *Parallel and Distributed Computing* (A)

Awards:

- ✓ E-Sports Scholarship, Fall 2024 & Winter 2024
- ✓ President's List, Fall 2023 & Winter 2024
- ✓ NSF Travel Grant, Fall 2023

Zhengzhou University of Light Industry (ZZULI) – Zhengzhou, China **September 2020 – July 2023**

B.Eng. in Software Engineering; GPA: 3.77/5.0; Ranking (6/485); Dual Program

Core Courses: *Python Programming* (95), *Big Data Analysis* (95), *Project-based Software System Practice* (95)

Awards:

- ✓ Second-Class Scholarship, 2022-2023 Academic Year

PUBLICATIONS

- Balakrishnan Dharmalingam, Brett Piggott, **Guohuan Feng**, et al. "Areo-LLM: A Distributed Framework for Secure UAV Communication and Intelligent Decision-Making," 33rd International Conference on Computer Communications and Networks **(ICCCN 2024)**, Big Island, U.S., July 2024
- Jiaqi Huang, Chongyang Zheng, **Guohuan Feng**. "Research on the Application of Binary Classification Dataset Based on Integrated Learning Model," 2024 IEEE 2rd International Conference on Image Processing and Computer Applications **(ICIPCA 2024)**, Shenyang, China, June 2024
- Brett Piggott, Siddhant Patil, **Guohuan Feng**, et al. "Net-GPT: A LLM-Empowered Man-in-the-Middle Chatbot for Unmanned Aerial Vehicle," 2023 IEEE/ACM Symposium on Edge Computing **(SEC 2023)**, Wilmington, U.S., December 2023
- **Guohuan Feng**, Junchen Lin, Keyi Wang. "Researches Advanced in Clustering Algorithms," 2022 International Conference on Applied Mathematics, Modeling Simulation and Automatic Control **(AMMSAC 2022)**, Xi'an, China, August 2022

RESEARCH EXPERIENCE

Areo-LLM: A Distributed Framework for Secure Unmanned Aerial Vehicle (UAV) Communication and Intelligent Decision-Making **September 2023 – May 2024**

Research Assistant, Anyi Liu's Lab

- Fine-tuned LLMs using **Supervised Fine-Tuning (SFT)** and **Reinforcement Learning from Human Feedback (RLHF)** to optimize UAV-specific tasks.
- Achieved accuracy **>95%**, F1 score **>80%**, and error rates **<5%** across anomaly detection and forecasting tasks, while reducing detection time by **~60%** through batch size optimization, achieving an average elapsed time of **9.08** seconds with a batch size of **128**.
- Fine-tuned LLMs like TimesNet and Time-LLM demonstrated efficient deployment with **low memory usage**, achieving **MAE loss of 0.2587** and **test loss of 0.1068** in UAV forecasting tasks.

Optimizing Binary Classification Models with Integrated Learning Approaches Model **July 2023 – January 2024**

Independent Researcher

- Achieved **93.23% accuracy** in binary classification using Gradient Boosting and Random Forest, outperforming baseline models by **20%**.
- Designed, implemented, and compared **5 machine learning models**, improving prediction stability and accuracy on Kaggle binary datasets.
- Processed and analyzed **10+ attributes** using advanced feature engineering and data visualization techniques (e.g., heatmaps, kernel density plots).

Net-GPT: A LLM-Empowered Man-in-the-Middle Chatbot for Unmanned Aerial Vehicle **May 2023 – October 2023**

Research Assistant, Anyi Liu's Lab

- Developed Net-GPT, an LLM-powered system achieving **95.3% accuracy** in mimicking UAV communication packets during man-in-the-middle (MITM) attacks.
- Analyzed and fine-tuned multiple models, including **Llama-2-13B, Llama-2-7B, GPT-2**, and **Distil-GPT-2**, using **79K+ network packets**, enhancing predictive accuracy through dataset optimization and parameter tuning.
- Demonstrated a **47× efficiency gain** by deploying smaller models (e.g., Distil-GPT-2) on edge servers,

maintaining **77% accuracy** for real-time applications.

Advancing Clustering Algorithms for Multidimensional Datasets **May 2022 – July 2022**
Advisor: Prof. Zengchang Qin, AMMSAC 2022

- Innovatively enhanced traditional clustering algorithms (e.g., K-medoids, CLARANS) by incorporating **adaptive distance metrics** (e.g., Mahalanobis distance) and **dimensionality reduction** techniques to tackle high-dimensional and imbalanced datasets.
- Developed and implemented **hybrid clustering frameworks**, integrating partition-based and density-based methods to address limitations such as noise sensitivity and irregular cluster shapes.
- Proposed scalable solutions with **GPU acceleration** and **parallelized workflows**, optimizing computational efficiency for clustering large-scale multidimensional datasets.

EXPERIENCE

StartNation Inc. **May 2024 – August 2024**
Software Developer Intern

- Tasked with optimizing and enhancing the **front-end architecture** of a **client-facing analytics platform**, focusing on improving **user engagement** and **experience**.
- Developed **interactive**, **responsive web interfaces** using **React**, **HTML5**, **CSS**, and **TypeScript**, ensuring smooth integration with backend APIs.
- Built reusable components with **React** and **Redux**, reducing code redundancy by **35%**. Improved cross-browser compatibility with custom CSS and ECMAScript, and collaborated with backend teams to implement **RESTful APIs**, reducing response times by **18%**.

Oakland University (OU) **January 2024 – May 2024**
CSI-3640 - Grader

- Assisted in delivering the **CSI-3640 (Computer Organization)** course, covering topics such as digital logic, assembly language, RISC and CISC architecture, input/output systems, and memory organization, helping students master complex computer architecture concepts.
- Conducted interactive lab sessions using **MIPS assembly language** and simulation tools, such as the **MARS simulator**, to demonstrate assembly programming, debugging, input/output, and program translation processes, enabling students to better understand instruction set architecture and microprocessor datapath design.
- Provided detailed feedback on **8 quizzes** to over **25 students**, helping improve comprehension of course material and strengthening practical skills through programming tasks based on **MIPS assembly language**.
- Proactively supported students struggling with Boolean algebra, logic gate design, and pipeline architecture concepts, resulting in **80%** of the students achieving **B or higher** grades in the course.