Haotian Wang

+1 (336) 929-4934 | starrywangv8@gmail.com | [LinkedIn](#) | [Website](#)

EDUCATION

Duke University — Aug. 2022 – May 2024
Master of Engineering in Computer Engineering — *Durham, NC*

North Carolina A&T State University — Aug. 2019 – May 2021
Bachelor of Science in Electrical and Computer Engineering — *Greensboro, NC*

Henan Polytechnic University — Sept. 2016 – July 2019
Bachelor of Science in Electrical Engineering — *Jiaozuo, China*

TECHNICAL SKILLS

Programming Languages: Python, C/C++, Rust, SQL, Java
Cloud & DevOps: AWS, Docker, Kubernetes, GitLab CI/CD
Frameworks & Tools: Git, Linux, Arduino
Systems & Concepts: Microservices, REST API, Distributed Systems, IoT, UI/UX

PROFESSIONAL EXPERIENCE

Duke University - Pratt School of Engineering — May 2024 – Present
Research Assistant — *Durham, NC*
- Developed an **analytical evaluation framework** for autonomous vehicle safety and reliability technologies, selected for inclusion in Prof. Kishor Trivedi's upcoming publication.
- Designed and implemented a **lightweight SQL-based research database** with **advanced filter, add, and delete functionalities**. Improved team research efficiency, shortening literature review cycle by **30%**.

Electric Power Research Institute (EPRI) — June 2023 – Aug. 2023
Engineering Intern — *Charlotte, NC*
- Built a **Python–VBA hybrid pipeline** to preprocess and analyze **400k+ time-series data points** from a large-scale energy storage pilot plant, improving processing efficiency by **20%** and enabling interactive Excel-based dashboards for data visualization.
- Authored three in-depth technical reports for the Energy Storage Technology Database (ESTD), accelerating **ETL workflows** by **15%** and delivering actionable data-driven insights on next-gen storage solutions.
- Collaborated with Energy Dome (Italy) to develop real-time CO_2-based energy storage monitoring software, improving processing throughput by **30%** and reducing resource loss by **20%**.

Nuclear Power Operations Research (Shanghai) Co., Ltd. — Dec. 2021 – Apr. 2022
Engineering Intern — *Shanghai, China*
- Contributed to published patent **CN116929758A** on early diagnosis of steam turbine bearing bush failures, focusing on data-driven fault prediction and abnormal temperature detection.
- Built lab-scale data classification and modeling pipelines on **100k+ sensor records** from DCS systems to identify thermal anomalies and assist in developing a real-time alert system with **15% accuracy improvement**.

NCAT & John Deere Company — Sept. 2020 – May 2021
Embedded Systems Researcher — *Greensboro, NC*
- Co-developed a **CAN–MQTT middleware bridge** using **Arduino, Raspberry Pi, and Python**, enabling real-time bidirectional communication between embedded IoT nodes and cloud systems.
- Led integration of a **TOML-based configuration system** for CAN-to-MQTT mapping and frequency controls, supporting **QoS 0/1/2** and event-driven publishing.
- Deployed system in smart plant-growth automation with sensor-triggered control via **Node-RED dashboard**, achieving **15% communication latency reduction**.

ACADEMIC PROJECTS

Cloud-Native Edge Control System with RAG & NLP — Mar. 2024 – May 2024
Project Lead — *Duke University, NC*
- Designed a cloud-native control system for GPS-enabled edge robots using **Rust, Qdrant, and Kubernetes**, achieving **99.8% uptime** and supporting real-time location and sensor streaming.
- Enabled AI-powered user interactions via chat-based UI and **Phi-3 LLM** with **RAG** integration; automated **CI/CD** with GitLab, **Docker**, and **GKE**, reducing deployment latency by **40%**.