SAM (SHENGKAI) XU

Master Student in Computer Engineering and AI Research

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EXPERIENCE

Embedded Firmware Engineer
Oxit LLC

May 2021 – May 2023 | Charlotte, NC

- Responsible for research and development initiatives aimed at crafting innovative tools to enhance project efficiency. Proficiently designed and implemented IoT automation pipelines within both AWS and Google Cloud environments.
- One of my major contributions was designing module libraries that streamlined embedded applications for different chip-sets.
- *Oxit is an engineering company specializing in low-power, long-range RF communication technology for IoT applications, including LoRa.*

AI Research Assistant
Transformative Computer Systems and Architecture Research Lab,

Aug 2022 – Jan 2023 | Charlotte, NC

- Researched and developed an AI pipeline for civilian security and public safety systems, with a specific focus on video processing and anomaly action detection.
- *TeCSAR is a UNC Charlotte research lab led by Dr. Hamed Tabkhi. The lab uses machine learning, deep learning, and data analytics to improve community safety, health, and well-being.*

PROJECTS

Mask Detector
Undergraduate Project

UNC Charlotte

Implemented YOLOv4/5 models to analyze mask usage in crowds from video footage, enabling statistical insights on mask-wearing in the surrounding area.

Office Pet Detector
Tech Demo

Oxit

Utilized using transfer learning with FOMO, a lightweight version of MobileNetv2, for edge devices such as Nvidia Jetson Nano and ESP32 embedded systems.

Student Formula Race Car
University Club Project

UNC Charlotte

Contributed to the electrical power and wiring department of the Student Formula Racing club, assisting the team in their participation in the Formula Student engineering competition.

ABOUT ME

As an international student with a strong engineering background and a passion for innovative technologies, I strive to make a positive impact by driving change through my work.

EDUCATION

M.Sc. Computer Engineering
University of North Carolina at Charlotte

Aug 2022 – Aug 2024

B.Sc. Computer Engineering
University of North Carolina at Charlotte

Jan 2018 – Dec 2022

SKILLS

- **Linux/Debian**
- **PyTorch/TensorFlow**
- **AWS/GoogleCloud**
- **Embedded C**
- **CAD/3D-Printing**
- **C++**
- **PCB/Circuit Design**
- **VHDL**

PUBLICATION

Path Planning for Robotic Delivery Systems
IEEE Conference Paper

Charlotte Area Traffic Light Dataset
IEEE Conference Paper (in press)