

# SAM (SHENGKAI) XU

Master Student in Computer Engineering and AI Research

@ shengkai.x.sam@gmail.com  
in shengkai-xu-sam

@ sxu7@uncc.edu  
samxu29

734-731-6398

Charlotte | Raleigh, NC



## EXPERIENCE

### Embedded Firmware Engineer

#### Oxit LLC

May 2021 – May 2023

Charlotte, NC

- Responsible for researching and developing tools to assist in various projects. 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

- Developed and researched an AI pipeline for civilian security and public safety systems 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

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

### Office Cat Detector

#### Tech Demo

Oxit LLC

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

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.

### 3D Printer Server

#### Personal Project

Developed automated 3D printing server stations that utilize the Telegram messaging API for remote printing.

## 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	● ● ● ● ●
SOLIDWORKS	● ● ● ● ●
Embedded C	● ● ● ● ●
PCB/Circuit Design	● ● ● ● ●
C++	● ● ● ● ●
VHDL	● ● ● ● ●
LaTeX	● ● ● ● ●

## ACHIEVEMENTS

**Publication**  
Published a IEEE conference article on Robotic Path Planning algorithm.

**IEEE HKN**  
Active member of IEEE Eta Kappa Nu

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