Sukriti Kushwaha

Boston, MA | US Citizen | Clearance: Secret

(781) 332-2296 | ksukriti08@gmail.com | Digital Portfolio | LinkedIn

OBJECTIVE

Seeking a full-time position focused on software development to support GNC.

PROFESSIONAL EXPERIENCE

Embedded Machine Learning Intern | *Python, C++, OpenCV, Pytorch, Linux* June 2025 – Present

Draper, Cambridge MA

- Conducted an in-depth literature review to recommend a state-of-the-art diffusion model for applying neural style transfer to improve simulation fidelity
- Investigated performance of vision-aided navigation on simulated data modified via custom sim2real pipeline to support autonomous systems in GPS-denied environments

Summer Research Intern | *MATLAB, Parallel Computing, Simulation & Modeling* May 2024 – Aug. 2024

MIT Lincoln Laboratory, Lexington, MA

- Analyzed capabilities of novel synthetic data generation tool for remote spaced-based sensors using MATLAB
- Ensured radiometric accuracy of synthetic atmosphere generation by matching the shape of the irradiance at aperture distributions with thermal imagery data products from infrared satellites
- Presented findings and recommendations in a technical talk delivered to group leaders to guide upcoming sponsor projects

Systems Engineering Intern | *C++, Python, Sensor Fusion, Web Dev, Raspberry Pi, Arduino* May 2023 – Jul. 2023

Northrop Grumman, Baltimore MD

- Programmed sweeping controls for gimbal mechanism in C++ powered by Arduino Uno and Raspberry Pi to secure client contract for prototype ground-based radar antenna system
- Created web server using Python flask and UDP socket to control heading and pitch to one degree accuracy

EDUCATION

Worcester Polytechnic Institute (WPI), Worcester, MA Aug. 2021 – May 2025

Bachelor of Science, double major in Robotics Engineering and Computer Science, GPA 3.87/4.0

PROJECTS

Tour Optimized Robotic Intelligence (TORI) | *ROS2, LLM, LiDAR, OCR, Python, C* *Code*

- Engages WPI visitors via Llama LLM, ASR and interactive React GUI powered by Jetson Orin Nano
- Operates elevators using custom button detection model trained using YOLO, enabling multi-floor navigation

Neural Nemesis | *Deep Learning, Computer Vision, CNN, Python* *Results*

- Depicted over-reliance of monocular depth estimation CNNs on non-depth features by training an adversarial patch using VGG-16 to induce incorrect depth estimations
- Printed adversarial patch and physically placed it in target scenarios to showcase practical applications

Trajectory Generation of Robotics Manipulator | *Semantic Segmentation, Trajectory Generation* *Results*

- Calculated the forward and inverse kinematics of a 4-degree robot arm, enabling precise mapping of joint movements in the task space to efficiently grasp a ball
- Conducted image segmentation and object recognition by applying HSV color masks to identify colored balls

Escape Room | *MQTT, Sensor Fusion, C++, IMU, ultrasonic rangefinder, IR emitter, IR position finder*

- Programmed set of Romi 32U4 robots to collaboratively escape from grid-based maze using MQTT protocol
- Implemented hysteresis control, PID tuning, and sensor fusion with complementary filter to optimize performance

AWARDS & RECOGNITION

- **Best Hardware & Riverside Research Covert Communications**, SHADE Android App *Results*
  GoatHacks Hackathon, WPI, 2025
- **Third Place**, *Public Perceptions on Central Bank Digital Currencies* *Results*
  Undergraduate Research Poster Competition, SWE National Conference, 2024
- **Most Futuristic Design**, *Space Encase: Micrometeoroid and Orbital Debris Mitigation* *Results*
  Intern Innovative Challenge, MIT Lincoln Laboratory, 2024