SHOVAN SHAKYA

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Education

University of South Florida <div align="right">**Tampa, Florida**</div>

Bachelors of Science in Electrical and Electronics Engineering, 3.55 GPA <div align="right">*Spring 2025*</div>

Skills

Languages: C, C#, C++, Python, Verilog
Software: OpenCV, Pytorch, ROS, Keysight ADS, Altium, KiCAD, Labview, Git, Vivado, LTSpice, MATLAB
Hardware: Oscilloscope, DC Power Supply, VNA/VSA, Spectrum Analyzer, FPGA, Micrcontroller
Certificates: Keysight Technologies RF and Microwave Level 1

Experience

Jaycon Systems <div align="right">**Palm Bay, Florida**</div>

Electrical Engineering Intern <div align="right">*September 2024 - Current*</div>

- Performed electrical tests on PCBAs for verification.
- Writing drivers for 2D Lidar and IMU.
- Researching and implementing Ultrawideband tracking.

Universal Creative <div align="right">**Orlando, Florida**</div>

Sensor Fusion Intern <div align="right">*May 2024 - August 2024*</div>

- Designed and implemented double sided 4 layer PCB module (2cm x 2cm) for STM32 with IMU, Ethernet SPI, CAN Transceiver, capable of handling upto 30V input voltage.
- Hot plate soldering LGA packages. Soldering QFN and SMT packages.
- Writing and testing firmware in C for the above STM32 PCB interfacing with IMU using I2C.
- Using CANBUS to daisy chain multiple modules to share IMU information.
- Transferring all the IMU information to computer using Ethernet SPI.
- Developed synchronized pose and camera data recording application for a mutli-stereo camera ROS based platform.
- Created 1D Bidirectional CNN model to train and test hand gesture recognition using pose information.
- Used image processing methods for verification and detection of flickering, cut-outs for display screens.
- Researching and developing autonomous dynanmic navigation for crowded environments using Nova Carter robot.

Monterey Bay Aquarium Research Institute <div align="right">**Moss Landing, California**</div>

Computer Vision Intern <div align="right">*June 2023 - August 2023*</div>

- Developed OpenCV based realtime disparity and distance estimation tool for fisheye stereo cameras with accuracy range of 5 meters (+- 300 mm) for desktop and VR.
- Integrated FathomNet YOLOv5 deep sea organism tracking model with distance estimation.
- Used Sockets to send realtime frames, and distance information between Python OpenCV application and Unity VR.
- Developed pilot-friendly User Interface for VR Unity application.
- Enabled multiprocessing and CUDA for optimal realtime performance.

Universal Creative <div align="right">**Orlando, Florida**</div>

Software Engineering Intern <div align="right">*September 2022 - December 2022*</div>

- Created C# and Python Flask applications for automated parsing of 200+ test files into XML for PLC based simulation
- Verification and Debugging of Ladder Logic for Siemens PLC using TIA Portal.
- Initiated exploration of Brain Computer Interface and Spatial Audio applications for park experiences.(Emotiv, Dolby)
- Deployed project involving a moving prop using stepper motors and microcontroller with other interns.

Projects

PCB Design for Infrared Spectroscopy <div align="right">**January 2024**</div>

- Developed circuit for a single channel fNIRS board.
- Designed a FPC PCB using Altium for emitter and diode.
- Designed a 4 Layer breakout PCB using Altium with FPC connector.
- Implemented impedance control for Bluetooth U.Fl connector.

RISC-V CPU on Basys 3 FPGA <div align="right">**2023**</div>

- Designed and implemented a 16-bit CPU for RISC-V based instruction set architecture on Basys 3 (Artix-7) FPGA.
- Testbenching, synthesis, and implementation done through Vivado and Verilog.