ANUJ GAJJAR

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WORK EXPERIENCE

THE MITRE CORPORATION Sep 2022 – Present

Embedded Software Engineer – *C++, Python, Node.js, Linux, FreeRTOS, Docker, CMake, Git* Bedford, MA

- Designed and delivered a configurable multi-platform, multi-threaded, event-driven GNSS/GPS receiver in C++ targeting Linux which supports 200+ experiments for the NTS-3 experimental satellite program
- Built components and tools for the development of cutting-edge GPS technologies (cryptographic concepts, signal definitions/modulations, and data encodings) for the NTS-3 program
- Optimized CPU and memory usage within components to meet tight real-time budgets
- Diagnosed and resolved 100+ defects spanning multiple threads, increasing CI coverage and improving system stability
- Containerized and streamlined builds and releases with Docker; saved 3+ hours per deployment
- Authored user and developer documentation, and provided ongoing support to users, developers, and partner programs leveraging the receiver

UNIVERSITY OF NOTRE DAME May 2021 – July 2021

Advanced Wireless Research Experience (AWARE) Fellow – *C++, Python* Notre Dame, IN

- Built Python and C++ libraries for simulating, testing, and characterizing an implantable smart breast clip that provides real-time information on the condition of breast cancer tumors (presented at SPIE BiOS, Campeau et al., 2024)

NORTHEASTERN UNIVERSITY – Optical Science Laboratory Jul 2019 – May 2022

Undergraduate Researcher – *Python, MATLAB, PyTorch, OpenCV* Boston, MA

- Aided in the development of convolutional neural nets and optical simulations with PyTorch and MATLAB to determine the orientation of collagen molecules (published in Journal of Biomedical Optics, Alzola et al., 2021)
- Prototyped machine learning-based image translation technique in OpenCV and PyTorch that utilizes confocal images of human skin to enable faster turnaround time in capturing microscopy images for skin cancer and disorder diagnosis

EDUCATION

NORTHEASTERN UNIVERSITY Sep 2018 – May 2022

B.S. in Electrical and Computer Engineering – GPA 3.8/4.0 Boston, MA

Activities: Sherman Center for Entrepreneurship, Generate Product Development

Coursework: Wireless Communication Circuits, Operating Systems, Medical Imaging, Embedded Design, Electromagnetics

Publications: Assessing Tissue Interrogation Volume of an Implantable Optical Sensor (SPIE BiOS, Campeau et al., 2024)
Measurement of Collagen Monomer Orientation (Journal of Biomedical Optics, Alzola et al., 2021)

PROJECTS

DISCTRACKER – *C++, FreeRTOS, Swift, Electronics & PCB design*

- Created an embedded device that enhances the experience of disc golf by providing gameplay metrics to players
- Designed and fabricated the device's electronics and PCB, developed FreeRTOS-based embedded software, and built functional prototypes with custom enclosures for user testing
- Developed an iOS application in Swift that visualizes and gathers real-time gameplay metrics over Bluetooth

MODE Radar – *C, TI RTOS, Python, Electronics & PCB design*

- Designed and implemented a radar system for mapping disaster environments with <10mm resolution
- Developed a PCB and RF phased array antenna for millimeter-wave radar, and embedded control software in C/TI RTOS
- Wrote multi-process external control/communication and data processing software in Python

ShowNXT – *React Native, Node.js, GraphQL, PostgreSQL*

- Built a full-stack application to streamline college athletics recruitment by enabling athletes and coaches to connect
- Developed in-app chat, improved application flow, streamlined user registration, and added functionality for editing and viewing user profiles, statistics, images, and videos, using React Native, Node.js, and GraphQL