# ANUSHA **DATAR**

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## EDUCATION

**OLIN COLLEGE OF ENGINEERING** **MAY 2021**

***BACHELOR OF SCIENCE IN ELECTRICAL AND COMPUTER ENGINEERING***

***Recipient of Four-Year, Half-Tuition Merit Scholarship***

**Relevant Coursework (through Spring 2020):** Circuits, Software Systems, Data Structures and Algorithms, Computer Networks, Computer Architecture, Analog Electronics, Modeling and Simulation in Python, Signals and Systems, Data Science, Digital Power Conversion, Electricity and Magnetism, Linear Algebra, Multivariable Calculus.

**Activities:** Human Augmentation Lab (Researcher, Signal Processing and Brain-Computer Interfaces), Student Government (President in 2019-2020), Stay Late and Create Leadership, Amateur Radio

## SKILLS

**COMPUTING:** C, Python, Java, C#, C++, MATLAB, Embedded Development, Wireless Networking, HTML/CSS/JS, Git

**OTHER:** Electronics Design/Fabrication, HAM Radio (Extra Licensed), Basic CAD, Laptop Diagnostics/Repair (Dell Certified)

## EXPERIENCE

**GOOGLE LLC – SOFTWARE ENGINEERING INTERN** **SUMMER 2020**

Used **C++** to develop **Bluetooth stack emulation capability** to enable integration testing of Basic Rate/Extended Data Rate Bluetooth profiles for novel, open-source **Fuchsia OS**. Personal contributions tracked publicly.

**MICROSOFT CORPORATON – DEVICES SOFTWARE ENGINEERING INTERN** **SUMMER 2019**

Built **C# software interfaces** to automate optical validation for device displays as part of larger Manufacturing Test Engineering ecosystem. Designed and implemented **C# tools and manufacturing processes** leveraging these interfaces.

**SILICON LABS – APPLICATIONS ENGINEERING INTERN** **SUMMER 2018**

Developed customer-facing programs, demonstrations, and projects in **C with a focus on ZigBee 3.0 wireless network security** for microprocessor/radio modules. Public-facing projects include a set of customer code and instructions for a trust center swap-out toolkit for the EmberZNet stack on Host/NCP and SoC platforms.

**THE MITRE CORPORATION – EMBEDDED SOFTWARE INTERN** **SUMMER 2017 AND JAN 2018**

Created **Python/C++** maintenance and platform abstraction frameworks for multi-platform GNSS system. Also applied machine learning to real-time **wireless signal modulation recognition** and in **MATLAB** and **Python**.

**OLIN COLLEGE OF ENGINEERING – IT TECHNICIAN** **SEPT 2017 - PRESENT**

Diagnose, repair, and maintain student and school devices, equipment, and networks.

**OLIN COLLEGE OF ENGINEERING – TEACHING ASSSISTANT** **SEPT 2018 - PRESENT**

Hold office hours, provide feedback and guidance in lab work, and assist with grading for courses such as **Analog Electronics**, **Data Structures and Algorithms**, **Machine Learning**, and **Neurotechnology**.

**ART OF PROBLEM SOLVING INC – GRADER/TEACHING ASSISTANT** **APR 2017 - PRESENT**

Provide thorough and inquiry-based feedback and guidance in **Python** and **mathematics** courses in real time, on online forums, and for formal problem sets through an online classroom and grading system.

## PROJECTS

**BRAIN-COMPUTER INTERFACING RESEARCH** **JANUARY 2018-PRESENT**

Developed experiments and analysis frameworks as part of Olin College's Human Augmentation Lab. Work includes studies on the role of stimulus ergonomics in electroencephalography-based attention classification, facial expression classification using electromyography, and the feasibility of combining biometric sensors and augmented reality headsets. Focused on signal processing and machine learning using MATLAB and Python.

**USRP AIRDROP** **DECEMBER 2019**

Wirelessly sent images between two USRP radio devices using Lempel-Ziv compression and QPSK modulation implemented in MATLAB. Worked in a four-person team. Produced extensive final report and repository .

**UNIX SHELL AND TEXT EDITOR IN C** **MARCH 2019**

Collaborated with three-person team to build fully functioning UNIX shell that supported piping, redirection, and globbing and contained both a functional, Vim-like text editor and LISP interpreter. Implemented project in C.

**CNC PCB MILL** **OCTOBER - DECEMBER 2018**

Worked with an interdisciplinary, four-person team to iteratively develop a functional and robust CNC PCB mill capable of producing complex designs with a smooth user interface. Focused on electrical and software design and implementation. Primarily wrote software in C, C++, and Python. Created project website.