# NABID FARVEZ

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## OBJECTIVE

Incoming Master's electrical engineering student seeking an internship position in the area of embedded product development including PCB design, firmware for MCUs, and higher-level software development for hardware.

## EDUCATION

GEORGIA INSTITUTE OF TECHNOLOGY, *Atlanta, GA* (Fall 2018 - Anticipated Spring 2024)

- **B.S./M.S. in Electrical Engineering,** Minor in Robotics, GPA: 4.0
- **Stamps President's Scholarship –** Full-ride merit scholarship for Top 40 (0.5%) of all GT undergrad applicants
- **ECE Senior Scholar Award** – Given to 34 of all graduating ECE seniors in class of 2022 with the highest GPA

## EXPERIENCE

MIT LINCOLN LABORATORY, *Lexington, MA* (May 2022 – **Present**)

***Electrical Engineering Intern (Div 3/Group 33*)**

- Constructed noise collection radar rack and validated coherency between receiver array for fielding external noise
- Coded C++ interface for commanding off-the-shelf receiver to save money and speed up future radar prototyping
- Led team during intern idea poster competition for a biosensing heating sleeve (**Top 6 Finalist of 38 teams**)
- Assisted in teardown and testing of site hardware for later deployment during travel to White Sand Missile Range

SARIOGLU BIOMEDICAL MICROSYSTEMS LAB, *Atlanta, GA* (Jan 2019 – **Present**)

***Research Assistant***

- Wrote Python script to automate microscope scanning for cell detection with OpenCV
- Constructed fluid-pump apparatus using AVR microcontroller and solenoid valves
- Designed PCB for time-division multiplexing of Coulter counter signals
- Developing motorized platform to align PDMS chips to higher precision than by hand to be used by researchers, involving stepper motor controller PCB design, Fusion360 CAD, and Python GUI app development

JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY, *Laurel, MD* (Jan 2021 – July 2021)

***Space Science Electronics Engineering Intern (SES/SRX*)**, Security Clearance: N/A

- Managed time across multiple tasks supporting instruments for NASA's Psyche, Dragonfly, PIMS, and BECA projects
- Ported MATLAB code for FPGA GUI control into GSEOS (Python) for circuit board slice testing on Psyche
- Designed GUIs in GSEOS (Python) to monitor and control vacuum pressure, accelerometer, and PSUs via UART
- Performed schematic capture in Mentor DxDesigner for low voltage regulators (buck, LDO) on Dragonfly board
- Automated two-month thermal testing and data collection for connector qualification with Python script (PyVISA)
  - Second author on IEEE ITherm Conference 2022 accepted paper, "Qualification of the Samtec SEAM and SEAF connectors for use as a PWA stacking connector in space applications"
- Assisted in BECA processor board debugging using scope, DMM, function generator, and datasheets

**Other:** Instructor for GT Electronics Makerspace (Fall 2019 - **Present**), Subteam lead/mentor for Biomedical Robotics Club (Spring 2022 **- Present**), Teaching Assistant for Intro ECE Seminar (Fall 2021), Teaching Assistant for Physics I (Fall 2019), Secretary of IEEE-Engineers in Medicine and Biology Society (Fall 2019, Spring 2019)

## PROJECTS

**Smart Sleeping Mask –** *Spring 2022 Capstone Design Expo* **(Won Best Overall Project out of 218 teams)**

- Electronics lead on mask to optimize wakefulness from sleep with REM detection via eye movement using EOG
- Originated and proposed idea through preliminary research and subsystem-level hardware description for mask
- Constructed breadboard prototype for testing early communication firmware and power for runtime estimation
- Designed and fabricated small form factor PCB with attention to digital/analog separation
- Fabricated and integrated hardware for three units of final design involving hand soldering of SMD components

**wARM Sleeve –** *ECE 4781: Biomedical Sensing Project*

- Sensing electronics and PCB lead for novel wearable arm sleeve project to improve finger dexterity using forearm heating upon detection of changes in deep tissue and surface tissue blood flow
- Designed and fabricated PCB with MCU and sensing components such as IMU, bioimpedance, PPG, and temperature
- Simulated custom analog front-end for four-wire bioimpedance sensing using LTSpice
- Co-author on final research paper and presentation, specifically on electronics section and system diagrams

**Others**: ARM mbed RPG game, Music Visualizer PCB, FPGA SRAM Peripheral Interface, Musical Sculpture

## SKILLS

- **Programming:** Python, MATLAB & Simulink, C, Git, Java, HTML & CSS, MySQL, basic VHDL
- **Electronics:** PCB design (KiCAD, Eagle, Mentor DxDesigner), LTSpice, Arduino/ARM mbed, Oscilloscope, Instrument Automation (SCPI/VISA), NI Multisim, Function Generator, Soldering, Laser Cut