

SHREYAS SANGHVI

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EDUCATION

Carnegie Mellon University, Pittsburgh, PA

Master of Science in Biomedical Engineering

GPA: 4.0/4.0

Award: Biomedical Engineering Department Head's Fellowship, Scholarly Project Funding – Spring 2025

NIIT University, Neemrana, India

Bachelor of Technology in Electronics and Communication with *Distinction*.

CGPA: 8.81/10

Award: Ram Rajinder Malhotra Medal for best all-around graduating student

SKILLS

Programming and databases: C/C++, Embedded C, Java, Python, SQL, Neo4J

Hardware: Advance: PIC16F family, STM32F1/F4 families; *Beginner:* TI C2000ware, TI F2806x family

Software: Eagle CAD, OrCAD, Altium, MATLAB, LTSpice, STM32 Cube, Kiel uVision, Solidworks, Labview, NI DAQmx, Linux, Embedded Linux

Prototyping: 3D printing (FDM / SLA), Laser cutting, Laser welding, Wood working

EXPERIENCE

iotaMotion, Pittsburgh, PA | *Systems Engineering Intern*

May 2025 - Aug 2025

- Designed and assembled an IEC 60601-1 compliant electro-mechanical prototype for next generation of iotaSoft (cochlear implant robot) enabling real-time force feedback during cochlear implant surgeries
- Reduced fault recovery time by 20% in legacy iotaSoft system through optimizing hardware-software feedback control, ensuring ISO 13485 and IEC 62304 compliance
- Automated System validation testing compliant with IEC62304 and ISO13485 for current generation of iotaSoft with custom test rigs and embedded scripts, boosting testing efficiency by 15% resulting in \$2.4M in annual savings

Phystech Labs Private Limited, Mumbai, India | *Co-Founder*

Nov 2020 - Aug 2024

- Raised \$42,000 Pre-Seed round from Government. of Gujarat to develop a feedback system for diabetic foot ulcer care
- Led a team of designers and engineers to develop graphene-based smart sock for real-time foot pressure monitoring, compliant with IEC 62304 and ISO 13485 standards, restoring mobility for 150+ bedridden patients
- Engineered a proprietary manufacturing workflow for custom orthotic insoles, accelerating diabetic foot ulcer recovery by 14 days through precision foot pressure redistribution (patent pending)

Jiva Science Private Limited, Bangalore, India | *Embedded Systems Engineer*

Aug 2022 - Apr 2023

- Implemented a microfluidics control system using TI-F28069M microcontrollers to control fluid flow rate at 10uL/min
- Reduced CNC micro-milling control box footprint by 10% through layout optimization, saving 15% in production cost

PROJECTS

HeartPrinter: A Parallel Wire Robot for Cardiac Intervention (*pending publication*) | [Github](#)

Aug 2024 – Dec 2025

Carnegie Mellon University, Pittsburgh, PA

- Integrated real-time navigation capabilities enabling active compensation for cardio-pulmonary motion during beating-heart procedures
- Enhanced control loop using NI DAQmx to make procedure 30% faster and achieved sub millimeter spatial resolution for each navigation waypoint during the procedure
- Redesigned the platform base to increase mechanical stability under dynamic operating conditions

FALCON: FoveA LoCalizatiON in En-face OCT Imaging via Explainable B-scan Classification and Transformer-Based Segmentation (*pending publication*) | [Github](#)

Jan 2025 – June 2025

Carnegie Mellon University, Pittsburgh, PA

- Implemented a dual pipeline machine learning algorithm as a team of four, with the target of automating fovea localization in En-Face Optical Coherence Tomography (OCT) images
- Leveraged VGG16 based classification on OCT B-Scans and Pretrained MAE autoencoder with U-Net++ decoder to achieve 98.72% accuracy on validation data set of B-Scan OCT images

Dr. Phix-it

Oct 2024

BioHacks 2024, Nucleate Pittsburgh, PA

- Led a team of four engineers to design a mobile interface in under 24 hours that demonstrates real-time data augmentation using haptics and audio-visual cues for cochlear implant surgeries
- Secured First place at BioHacks 2024 and received a prize of US\$1500