

Indraja (Indu) G. Chatterjee

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Education

Georgia Institute of Technology | Atlanta, GA

August 2020 – Present

- Bachelor of Science in Computer Engineering Expected Graduation, May 2024
- GPA: 3.62/4.0
- Distributed Systems and Software and Systems in Architecture with Signal and Information Processing coursework
- Study abroad at Georgia Tech Lorraine (Metz, France) August - December 2022

Skills

Programming: Java, Python, C++, C, Assembly, MATLAB, VHDL, Verilog, Powershell, SQL, Linux, CMake, TCL

Hardware: ARM mbed, Raspberry Pi, Arduino, FPGA, MyDAQ, Integrated circuits, Printed circuit board

Software: CAD, Docker, Autodesk Eagle, Azure Devops, GitHub, KiCAD (EDA), Microsoft Office, NI Multisim

Instrumentation: Oscilloscopes, Multi-meters, Power supplies, Soldering & Wiring, 3D printing, Machine Shop, Prototyping

Professional Organizations: Society of Women Engineers, Women in Electrical and Computer Engineering, IEEE

Communication: Agile, Engineering Drawings, Presentations, Public Speaking, Reading Datasheets

Experience

L3Harris Space & Airborne Systems | Palm Bay, FL

May 2022 – July 2022

Software Engineering Intern

- Upgraded Built-in Tests diagnostic Python tool and debugging Integrated Core Processor device OS boot issues on the F-35 jet

Opportunity Research Scholars – iSenSys Lab | Atlanta, GA

August 2021 – May 2022

Undergraduate Research Assistant

- Presented research at IEEE RFID Conference on experiments testing industry gas multisensor vs. new multivariate gas sensor
- Data acquisition on raw sensor data utilizing Matlab and Python for Pytorch neural network with 1.2 million data points

Flexware Innovation | Fishers, IN

May 2021 – January 2022

Trailblazer Intern - Integration Team

- Developed a C# platform's Azure Pipelines automated build for Fortune 500 pharmaceutical customer, reduced time by 3 hours
- Prototyped and built customer demo in 2 months integrating Real Time Location Systems, Industrial Robots Fleets, and Digital Twin using Ignition and SQL database for software and KiCAD for the custom designed PCB

Projects

Robojackets: Robonav

September 2020 – May 2022

Electrical Lead

Creating an autonomous robot for the Intelligent Ground Vehicles Competition (3rd place Design), University Rover Challenge

- Managing a 20-person electrical sub team, designing for transition to University Rover Challenge
- Designing and testing custom PCBs for diagnostic system, utilizing CAN protocol to communicate, integrating firmware with ROS

Medical Robotics: Team LIMBO

August 2020 – December 2020

Creating a low-cost prosthetic arm utilizing machine learning to trace EMG signals to finger movements with haptic feedback

- Processing muscle movement EMG signal data and creating a machine learning algorithm to identify movements

Relevant Courseworks

Embedded Systems: C++, Raspberry Pi, Real-Time OS, device drivers, buses, Analog and Digital I/O, processors (Spring 2023)

Operating Systems: x86, Linux, Docker, CMake, kernel, Assembly, implement core components of operating systems (Spring 2023)

Fundamentals of Digital Signal Processing: MATLAB, Discrete Signals, Sampling, Filters, Fourier Analysis, Z-Transform (Spring 2023)

Objects and Design: Agile, Unit tests, System Sequence Diagram, Use Case Model Diagram, Android Studio, Git (Spring 2023)

Computer Networking: TCP/UDP, Internet protocol stack, HTTP, DNS, Network security, delay, loss and throughput (Fall 2022)

Data Structures & Algorithms: LinkedLists, Trees, Hash Maps, Graphs, Sorting, Pattern Matching (Spring 2022)

Intro to Object-Oriented Programming: object-oriented features, exceptions, recursion, Big-O, javaFX (Fall 2021)

Architecture, Systems, Concurrency and Energy in Computation: Verilog, ISAs, processors, concurrency, multithreading (Fall 2021)

Digital Design Lab: VHDL on FPGAs, CAD schematics, logic simulation, technical reports (Spring 2021)

Programming HW/SW Systems: C, MIPS assembly, operations in instruction-set architecture (Spring 2021)

Circuit Analysis: RLC, op amps, AC phasor analysis, frequency response, Bode plot, Laplace transform (Spring 2021)

Digital Systems Design: CMOS, logic gates, combinational logic, sequential systems, state machines (Fall 2020)

Activities

HIVE Makerspace Peer Instructor | Atlanta, GA

September 2020 - May 2022

- 4hrs/week teaching students to use benchtop electronics and machine shop, assisting students with class and personal projects