JACKSON ISENBERG

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EDUCATION

Georgia Institute of Technology — Atlanta, GA
Master of Science in Robotics — August 2024 – Present

Bachelor of Science in Computer Science, Minor in Robotics — June 2020 – May 2024

- Graduated with Highest Honors
- Concentrations: Systems & Architecture, Computer Intelligence
- Coursework: Control Theory, Deep Learning, Compilers, Processor Design, Operating Systems, Signal Processing

EXPERIENCE

Low-power, Adaptive, and Resilient Systems Lab — Atlanta, GA
Undergraduate Research Assistant — August 2022 – May 2024

- Worked with the Amazon AWS Deepracer stack to locally train and test a DNN-based RL model for autonomous vehicle pathing utilizing environment information from camera input
- Created an architecture-agnostic fault injection and resilience framework in TensorFlow

Georgia Tech Research Institute — Atlanta, GA
Student Research Assistant (TMPO Lab, CIPHER) — May 2021 – May 2024

- Designed and implemented the first real-time operating system in Rust for the Cortex R4 where nearly 100% of Rust's safety features at abstraction levels above the bootloader were utilized to improve upon the critical safety of the system
- Worked on various FPGA projects related to architecture analysis and bitstream generation (secret clearance)

Research Intern (ATAS) — June – July 2020

- Worked and modeled a 5 degree-of-freedom Arduino-powered arm and developed a C++ library for the arm's inverse kinematics
- Researched various OpenCV-extendable libraries such as AprilTags for detecting visual orientation of the end effector

Research Intern (ATAS) — June – July 2019

- Improved the design of the battery compartments in the Kennedy Space Center piezoelectric tiles to prevent expansion over time due to trapped heat
- Was the sole researcher of UV-C LED liquid waste treatment for the Gates Foundation Reinvented Toilet

PROJECTS

Neuraphonic (HackGT X) — *Python, PyTorch, Scikit-Learn, Google Cloud, Twilio, MATLAB*
Developed a diagnostic assistant for Parkinson's disease utilizing a vision transformer and signal processing techniques to extract various features from audio samples uploaded to a website hosted on Google Cloud or through telephone. Won 2nd place best overall project out of 189 total teams.

National Characteristics Search (Capstone Project) — *Python, SQLite*
Produced a stand-alone application in Python that accesses characteristic data (such as total population, median income, etc.) from the US Census in a way that enables quick and easy access and saves that data to a local database using SQLite. Created in partnership with the Emory University School of Medicine for research into the correlation between neighborhood characteristics and the development of schizophrenia.

FTCLib — *Java, Kotlin, OpenCV*
Founded and led the development of a Java library for FIRST Tech Challenge used by hundreds of teams internationally to enhance their software efficiency and experience.

EXTRACURRICULAR

HyTech Racing
Data Acquisition

- Designed schematics and fabricated PCBs to retrieve sensor data
- Programmed and tested Arduino/Teensy microcontrollers over a CAN line for messages containing sensor data to be parsed into a useful, readable format for debugging and testing

RoboJackets
IT Coordinator

- Managed all networks and distributed services maintained by the organization and provided to over 600 members
- Provided assistance to any members experiencing issues with their provided services, connections, or loaned devices

SKILLS

Languages	Java, Python, C/C++, Rust, Verilog, VHDL, HTML, JavaScript, MATLAB
Frameworks	NumPy, PyTorch, TensorFlow, JavaFX, React
Software	Git, AWS, Docker, ROS/ROS2, Virtual Machines