JACKSON ISENBERG

770-668-6875 ◇ jisenberg3@gatech.edu ◇ github.com/JIceberg ◇ linkedin.com/in/jaxonfiles

EDUCATION

Georgia Institute of Technology — Atlanta, GA

Master of Science in Robotics — August 2024 – Present

- GPA: 4.0/4.0

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

- Graduated with Highest Honors
- 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

- Trained and tested a deep RL model on the AWS DeepRacer stack for autonomous vehicle pathing with camera input
- Created an architecture-agnostic fault injection and resilience framework in TensorFlow for any black-box neural network

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 by replacing the neoprene casing with a material that does not absorb and retain heat
- Developed and presented a liquid waste treament method for the Gates Foundation Reinvented Toilet involving a multi-stage filter and UV-C LED disinfectant system that would have a 99.9% success rate at producing safe drinking water

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 with a cash prize of $3k and was accepted for the Create-X Startup Launch with initial funding of $35k

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 U.S. 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 with pre-built CV pipelines, hardware wrappers, and path following to raise the floor of software for thousands of competing teams' robots across the world

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