JACKSON ISENBERG

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EDUCATION

Georgia Institute of Technology June 2020 – May 2024

Bachelor of Science in Computer Science

- Concentrations: Systems & Architecture, Artificial Intelligence and Machine Learning
- Minor in Robotics
- Coursework: Linear Control Theory, Control System Design, Deep Learning, Embedded Programming, Operating Systems, Compilers, Computer Vision, Signal Processing, Data Structures, Algorithms, AI for Robotics

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 uitilizing 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 – Present

- 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
- 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 using the FABRIK algorithm
- Researched various OpenCV-extendable libraries such as AprilTags for detecting visual orientation of the end effector

Research Intern (ATAS) June – July 2019

- Researched piezoelectric materials and responsiveness of neoprene to heat for tiles used at the Kennedy Space Center
- Sole researcher of liquid treatment using UV-C LEDs for the Gates Foundation Reinvented Toilet which had an effective wavelength range of 250-300 nm

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.

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.

Grouch — *Python*

Created a scraping program in Python 3 that aids the registration process for Georgia Tech students by checking vacant spots and available waitlists as an alternative to the currently paid service that students use.

EXTRACURRICULAR

HyTech Racing

Data Acquisition

- Designed schematics and fabricated PCBs to retrieve sensor data to be analyzed
- 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 the networks and distributed services provided to over 600 members, including setting up mailing lists and the shared file system used by team 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