

JACKSON ISENBURG

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EDUCATION

Georgia Institute of Technology

June 2020 – May 2024

Bachelor of Science in Computer Science

Concentration in Systems & Architecture and Intelligence

Minor in Robotics

EXPERIENCE

Undergraduate Research Assistant

August 2022 – Present

Low-power, Adaptive, and Resilient Systems Lab

Georgia Tech

- 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
- Implemented fault injection with a custom resilience framework to validate theoretical responses to errors in the model

Student Research Assistant

May 2021 – Present

CIPHER

Georgia Tech Research Institute

- 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)

Junior Research Assistant

June – July 2020

Aerospace, Transportation & Advanced Systems Laboratory

Georgia Tech Research Institute

- 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

Junior Research Assistant

June – July 2019

Aerospace, Transportation & Advanced Systems Laboratory

Georgia Tech Research Institute

- 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 (Second Place Overall in HackGT X)

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.

FTCLib

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

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

Programming

Java, Python, C/C++, Rust, Verilog, VHDL

Tools

AWS, Docker, ROS/ROS2, Virtual Machines

Hardware

Arduino, Raspberry Pi, PCB Design, FPGAs, Microcontrollers, Machining & Manufacturing

Software

Operating Systems, Embedded Programming, Distributed Systems, Computer Vision, Deep Learning

Robotics

Linear Controls, Motion Planning