

SIVA APPANA

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Education

Georgia Institute of Technology

Aug. 2021 - Dec. 2024

BS in Mechanical Engineering, Minor in Computer Science (Intelligence)

Atlanta, GA

GPA: 4.000/4.000 (Junior)

Relevant Coursework

- Data Structures
- Computer Structure & C
- Java
- Numerical Methods
- Object-Oriented Prog.
- Python
- MATLAB
- Linear Algebra

Academic Experience

Georgia Tech Mechanical Engineering - ME 2110

Aug. 2022 - Present

Undergraduate Teaching Assistant

Atlanta, GA

- Trained over 100 students to operate makerspaces' machinery and efficiently program Arduinos in C and C++.
- Developed optimized design, electrical, and fabrication solutions as teams constructed autonomous robots.
- Programmed and debugged Arduinos for effective power draw and efficient mechatronics sensor/actuator usage.

Research

A Novel Approach to Resin-based Additive Manufacturing, Georgia Tech

Aug 2022 - Present

Developed an automated system for a novel resin-based manufacturing system allows unsupported overhangs.

- Experimented on optimal curing conditions and developed a well-researched, stepper motor-based curing apparatus that implements a patented fluid interface support system for reduced material wastage and improved surface quality.
- Automated the pumps, sensors, and motors in the system using MATLAB and Python with positive feedback loops.

Automating the Pruning Process for Peach Trees, Georgia Tech Research Institute

Jan 2022 - May 2022

Developed software for identifying excess branches on a tree and fabricated a pruning end-effector for a UR5 robot arm.

- Utilized a LIDAR scan's point cloud with vector mathematics and ray-casting algorithms in Python for pruning.
- Designed and fabricated a slim and autonomous prototype for an end-effector that uses buttons to detect the optimal pruning point and orientation based on the received coordinates from the algorithm.

Projects

ME 2110 Autonomous Robot | C++, Arduino

May 2022 - July 2022

- Designed and fabricated a cost-effective, reliable, and autonomous robot that won first place in design and competition.
- Efficiently allocated memory to ensure repeatability and maximize output with provided sensors/actuators.

CMA Connect Project | AWS, ReactJS, RestAPI, Python

May 2020 - Oct. 2021

- Used AWS Cloud infrastructure to develop a web application using ReactJS and RestAPIs to digitalize organization records and allow data collection for Chinmaya Mission Alpharetta nonprofit organization.
- Collaborated with 4 members to analyze data using Python visualization techniques and to provide automated feedback.

Awards/Certifications

ME 2110 Competition: 1st Place Design Review, 1st Place Competition

Python: Python Specialization - University of Michigan

Microsoft Word: Word 2015

Microsoft Excel: Excel 2015

Technical Skills

Programming: Python, Java, C, C++, SQL, ReactJS, MATLAB, C#, AWS, RestAPI, Github, Machine Learning

Modeling: Unity, Adobe Creative Cloud, SolidWorks, Autodesk Inventor, AutoCAD, Simulink

Instrumentation: 3D Printers, Laser Cutters, Metal Tooling (Mill, CNC, Waterjet, Lathe), Carpentry

Leadership

Science Olympiad (Service Organization)

Aug. 2021 - Present

Build Director, Event Supervisor

Georgia Tech

- Led web-development and sponsorship efforts to increase membership by x3 and increase the organization's awareness.
- Supervised engineering events when hosting the high-school state Science Olympiad competition and communicated with suppliers and volunteers to ensure competition readiness.