

SIVA APPANA

☎ 404-940-1135 ✉ appana.siva@gmail.com [in linkedin.com/in/sivaappana](https://www.linkedin.com/in/sivaappana) [github siva-appana.github.io](https://github.com/siva-appana)

Education

Georgia Institute of Technology

Aug. 2021 - Dec. 2024

BS in Mechanical Engineering, Minor in Computer Science Intelligence

Atlanta, GA

GPA: 3.93 (Senior)

Relevant Coursework: Nonlinear Systems, Mechatronics, Controls, Machine Design, Heat Transfer, ML

Technical Skills

Modeling: SolidWorks, Autodesk Inventor, Fusion360, Animation, Rapid Prototyping, CNC Machining, PCB Development

Programming: Python, Java, C, C++, MATLAB, Simulink, LabView, C#, Machine Learning

Experience

NASA Ames Research Center

June 2023 - August 2023

ARMADAS Project Robotics and Structures Intern

Mountain View, CA

- Designed and prototyped novel attachments and grippers for lattice-traversing robots that build periodic structures.
- Followed agile management by documenting findings on Confluence and presenting research topics during standups.

Academic Experience

Georgia Tech RoboJackets

April. 2023 - Present

Project Manager, BattleBots Builder, Mechanical Curriculum Designer, Mechanical Trainer

Georgia Tech

- Formed a combat robot research division to experiment with electronics characterization and manufacturing methods.
- Communicated plans with lead robot engineers, planned event logistics, procured supplies, and acquired sponsors.
- Developed a lecture and demonstration curriculum for an 8-week course teaching Autodesk Inventor CAD, materials, manufacturing techniques, design considerations, finite element analysis, and dynamic simulations to over 50 students.

Georgia Tech Mechanical Engineering

Aug. 2022 - Present

ME 2110 Undergraduate Teaching Assistant

Atlanta, GA

- Trained and mentored over 200 students to operate wood-tooling, rapid prototyping methods, and mechatronics parts.
- Suggested design, electrical, and manufacturing solutions to teams in preparation for an autonomous robot competition.

Research

Footer Module Systems for Discrete Metamaterial Structure Construction

May 2023 - Present

Designed, optimized, and prototyped footer systems that interface with metamaterial structures. Lattice-traversing robots autonomously manipulate the systems to conform structures to uneven terrains, eliminating needs for site preparation.

- Published and presented the telescoping structure system and construction algorithm in the IEEE AeroConf.

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

Aug 2022 - Present

Computationally modeled, using COMSOL, photosensitive resin that cures in the presence of a fluid support based printing system. Designed and fabricated the printer that controls the thin fluid layers to print without support structures.

- Published and presented the COMSOL model at the Solid Freeform Symposium with my two partners.

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

Jan 2022 - May 2022

Developed an algorithm, using a tree's LIDAR scan, to identify prune points in 3D based research tree shape factors.

Designed, fabricated, and programmed an end-effector for a UR5 robot arm that integrates commercial pruning shears.

- Collaborated with a team of 12 members, using Github, SolidWorks, and 3-D Printing, to successfully prune branches.

Projects

Balancing a Reuleaux Triangle using a Momentum Wheel | *Inventor, Control Laws*

Aug. 2023 - Dec. 2023

- Modeled the triangle's, momentum wheel's, and DC motor's dynamics and stabilized the triangle on a vertex using PID.

30lb BattleBot | *Inventor, FEA, Machine Design, CNC Mill, MATLAB*

May 2022 - June 2023

- Designed parametric weapon and chassis parts, fabricated metals and plastics, and programmed motor PWM.

ME 2110 Robot | *SolidWorks, Carpentry, Arduino (C++), Pneumatics, Mechatronics*

May 2022 - July 2022

- Designed and fabricated a cost-effective, reliable, and autonomous robot that won 1st place in design and competition.

Low-Cost Multifunctional Heating Device | *SolidWorks, 3D Animation, Topology*

Aug. 2021 - Dec. 2021

- Designed a low-cost solar reflector that integrates a stove, sterling engine, and dryer function to target problems encountered by underprivileged populations in equatorial regions.