Shreya Terala

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EDUCATION

Johns Hopkins University | Baltimore, MD — Expected Dec 2026
MSE in Robotics, Concentration in Medical Robotics, MSE Distinguished Fellow
Relevant Coursework: Computer Integrated Surgery, Haptic Interface Design, Robot Dynamics Kinematics & Control

Georgia Institute of Technology | Atlanta, GA
BS in Mechanical Engineering, Minor in Robotics, 2024 Millennium Fellow
Relevant Coursework: Biomedical Instrumentation, Mechatronics, Machine Learning, Intro to Artificial Intelligence, System Dynamics

EXPERIENCE

Hardware Engineering Co-op — Jan 2025 - June 2025
Amazon Robotics | Manipulation HW Team | North Reading, MA
- Designed a servo-pneumatic piston and demonstrated position control while initiating benchmarking for future iterations
- Implemented electrical dresspack design and routing along the robotic arm to end-of-arm-tooling (EoATs)
- Fabricated and tested quick turn prototypes for validating design decisions and direction
- Investigated robot collisions modes in the field to define typical collision conditions & derive loading requirements for EoATs

Mechanical Engineering Intern — April 2023 - May 2025
Rockwell Automation | Low Voltage Drives Mechanical R&D Team | Mequon, WI
- Led thermal simulation efforts using Ansys Icepak with the goal of optimizing cooling and lifetime of electronic components
- Developed new heatsink optimization method to optimize lowering component cost while maintaining optimized cooling
- Designed & fabricated 2 fixtures and 1 mount using Creo and 3D printing to decrease risk of damage to electrical components due to misalignment during manufacturing
- Assisted with thermal and airflow testing of a new product to determine the required volumetric flow rate of the fans, optimal layout of the electronic components, and optimal cooling of power modules
- Developed assembly instructions to bridge the information gap between the mechanical and industrialization teams
- Researched UL IP54 standard specifications to design a compliant cover using Creo Parametric for a new line of drives

Undergraduate Researcher — Aug 2022 - Dec 2024
Georgia Tech EPIC Lab | Generalized Robotic Assistance for Handling And Manipulation (Department Of Energy/Back Exo Team)
- Led experimental collection, data processing, and shallow machine learning model development to predict ground reaction forces from foot pressure insoles
- Developed a Temporal Convolution Network (TCN) model to provide joint moment & loading estimates to the controller
- Utilized ROS2 to integrate mechatronics and sensing systems into the TCN-informed controller to provide informed torque assistance to exoskeleton users
- Designed and fabricated robust exoskeleton components using SolidWorks, 3D printing, and machining
- Automated startup of load cell data broadcasting to a ROS node using Bash to decrease experimentation setup time

Georgia Tech EPIC Lab | Activity-Invariant Human Augmentation (X Team)
- Analyzed sensor data from hip and knee exoskeletons using MATLAB to determine angle, torque, and power profiles of cyclic and non-cyclic daily activities under various exoskeleton conditions for assistance in ML model development

Project & Technical Lead — Oct 2021 - Dec 2024
Georgia Tech Engineers Without Borders | Nepal Team - Constructing a water supply system for a community in Madhyabindu, Nepal
- Established project basis and consistent communication with mentors, local stakeholders, NGO, and the community

Georgia Tech Engineers Without Borders | Malawi Team - Constructing latrines at a primary school in Salima, Malawi
- Established and upheld the direction & timeline of the project and facilitating internal and external project communication
- Led a team of 5-10 technical members in the design and structural integrity testing of the latrines
- Designed the CAD model and contractor drawings for the staff latrines using Autodesk Fusion & AutoCAD
- Coordinated remote construction with the selected local contractor across two Malawi-based NGOs

Team Member — Oct 2021 - Feb 2023
Georgia Tech RoboJackets | RoboNav Mechanical Team for University Rover Competition
- Assisted in design, CAD modeling in Autodesk Inventor, and fabrication of a rover science module intended to collect soil samples and determine if they contain life

Georgia Tech RoboJackets | Battlebots 3lb Team - Insaniti
- Designed the robot chassis, electronic layout, and weapon in Autodesk Inventor
- Used MATLAB to conduct performance analysis based on the robot's characteristics to determine the best weapon motor

PROJECTS

breathSense - Haptic Feedback Meditation Device | Georgia Tech & Emory University — Aug 2024 - Dec 2024
- Collaborated with stakeholders from FaniLab at Emory University to create a breath-synced, vibrotactile vest that will assist their clinical trials, provide real-time feedback of breath profiles, and control over vibration intensity and profiles
- Conducted background market research, derived customer requirements, downselected between various architectures, and developed selected electronics system and packaging to deliver a functional device to the lab

RUBI - A Self Solving Rubik's Cube — Sep 2024 - Dec 2024
- Developed an internally motorized Rubik's cube that self-solves after its scrambled state is captured using computer vision
- Spearheaded the development of the code pipeline from computer vision based color identification to algorithm generation to discrete moves to motor commands transmitted via Bluetooth

Amputee Residual Limb Monitoring Compression Sock — Oct 2024 - Nov 2024
- Developed a smart, wearable compression sock to monitor the progression of post-amputation limb shrinkage in real-time
- Created a snap-fit housing for the electrical circuit, characterized sensor data, and developed a real-time monitoring system streaming data from an ESP32 via Bluetooth

SKILLS

Software: Creo Parametric, Solidworks, Autodesk Inventor, Autodesk Fusion, C++, MATLAB, Python, Ansys Icepak, Windchill, SAP, Prusa Slicer, Cura Slicer, Git, Java, JavaScript, HTML, CSS, Bash, ROS

Instrumentation: FANUC Robotic Arms, CNC Lathe & Mill, Laser Printing, 3D Printing, Soldering Tools, Shop Equipment

Concepts: CAD Design, Finite Element Analysis, Design For Manufacturing, Object-Oriented Programming, Closed Loop Control Systems, Linear Algebra, Multivariable Calculus, Differential Equations, Data Structures & Algorithms, Statistics & Probability