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Cody Houff

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EDUCATION

Georgia Institute of Technology — Atlanta, GA
M.S. Robotics concentration in AI, Computer Vision, Controls — 2021 - 2023
GPA: 3.83/4.00

Tennessee Technological University — Cookeville, TN
B.S. Mechanical Engineering concentration in Mechatronics — 2015 - 2019
GPA: 3.95/4.00

EXPERIENCE

Graduate Research Assistant - Robotics Lab — 2022 - Current
- Currently work as a paid research assistant where I apply machine learning to robotics
- Led projects, designed and trained models, implemented interpretability tools, collected and curated video datasets, and designed data capture hardware and protocol
- Led a lab reading group focusing on transformers, RL, and current robotics papers

Project Lead Robotics Engineer - E.G.O. Products — Summer 2022
- Programmed AGV to store and deliver 500 spools to 4 lines with robust error handling
- Trained 30+ workers to interact with my custom user interface and the robot
- Manager of robotics line, added a buffer to the line which alleviated a large bottle neck

Project Lead Engineer - Johnson Controls — 2020 - 2021
- Designed and launched a new sprinkler with tamper resistant design for use in prisons
- Worked on a material change for 3 different sprinklers with an annual volume of 2 million units
- Designed and tested sprinklers that are compliant with NFPA, UL, and FM

Mechanical Engineer - Protomet Manufacturing — Summer 2018
- Designed and manufactured a universal speaker mount that has been sold to companies and designed other products

Engineer - Oak Ridge National Laboratory — Summer 2016
- Worked with fire modeling software (FDS) to discover the optimal building safety design
- Co-authored fire protection engineering assessment (FPEA) of multiple facilities using NFPA 13, NFPA 25 codes

PUBLICATIONS

ForceSight: Multi-Task Text-Guided Mobile Manipulation with Visual-Force Goals - Link — CoRL 2023
- proposes visual-force goals for mobile manipulation, enabling a variety of robotic tasks.

Visual Contact Pressure Estimation for Grippers in the Wild - Link — IROS 2023
- With an image as input, our model achieves SOTA contact pressure and force/torques estimations for robot grippers

PROJECTS

Learning Robotic Tasks from Video Demostration — 2022
- Designed a robotic system to learn control policies using only video data in a simulated robot env with a transformer

Combination and Benchmark of RL Models — 2022
- Created a custom RL agent and benchmarked the top RL algorithms using OpenAI Gym

NLP Sentiment Analysis — 2022
- Created and trained an NLP model, used on a custom test set of tweets & reddit posts to evaluate sentiment on a topic

SKILLS

Programming: Python, C++, MATLAB, Computer Vision, Machine Learning, Git || **Design:** Solidworks, CAD, Creo
Machining: Mills, Lathes, CNC Machines || **Other:** ROS, LabVIEW Linux, ANSYS