

EDUCATION

University of Colorado, Boulder	Boulder, CO
Masters of Science in Computer Science; GPA: 3.94	Aug. 2023 – May. 2025
University of Colorado, Boulder	Boulder, CO
Bachelor of Science in Computer Science; GPA: 3.87	Aug. 2020 – May. 2024

SENIOR CAPSTONE PROJECT

Trimble Inc.	Westminster, CO
	Aug. 2023 - May. 2024
<ul style="list-style-type: none">• Demonstrated the viability of automatic calibration of a 3D radar system for construction vehicles. The procedure eliminates the need for an on-site expert and reduces the time to calibrate a machine for autonomous operation.• Implemented DBSCAN to extract features from noisy radar data by clustering, and applied the Procrustes superimposition algorithm for point alignment which achieves a transformation error of down to 0.1m between radars.• Provided weekly KPI-driven status reports to stakeholders, leveraging the Agile methodology to ensure transparency, alignment with project goals, and an adherence to the project roadmap.	

PROJECTS

Imitation Learning for Robotic Manipulation	2025
<ul style="list-style-type: none">• Developed a model that maneuvers a robot to push a T-shaped block to a target destination. Implemented an encoder-decoder transformer model with a linear action head with PyTorch.• Matched the performance of SOTA Diffusion Policy while using 30% fewer parameters. Across 100 simulations, both models average a 78% completion and DP achieves 59 perfect runs over my 55.	
Semantic Segmentation of Arctic Sea Ice	2024
<ul style="list-style-type: none">• Generated sea ice maps from satellite images of the Hudson Bay using SegFormer transformer model architecture. Improved performance over existing U-Net models from 83% to 89% pixel accuracy, demonstrating the possibilities of automatic sea ice mapping to reduce labor and ensure these maps remain up-to-date for safer seafaring.	
Analysis of EPL Betting Odds and Reliability	2024
<ul style="list-style-type: none">• Compared the predictive power of bookmakers' pregame betting odds against player statistics for English Premier League match outcomes using random forest classifiers. Achieved 57% and 53% accuracy respectively, with finer granularity results at team, player, and statistic levels, which reveals outliers.	
Community Detection on Facebook Friend Networks	2023
<ul style="list-style-type: none">• Applied the Louvain hierarchical clustering algorithm to Facebook friendship data to identify communities based on the network topology. Identified the attributes (e.g. dorm, age, major) that best predict community using logistic regression on user metadata, achieving 80% accuracy.	
Comparison of Vaccination Strategies on Contact Network	2023
<ul style="list-style-type: none">• Compared the performance of several vaccination strategies using SIRV simulations on a contact network to inform public health policy by better understanding how epidemics spread. Discovered that targeting high-degree nodes lowers peak and total infections by up 21% and 50%, respectively, over a strategy that targets bridge nodes.	
University Discussion Web Forum	2021
<ul style="list-style-type: none">• Developed a Reddit-like web forum using Node.JS and EJS templating with a PostgreSQL database where users can post, comment, and vote about anything related to CU Buffs.	

RELEVANT COURSES

Transformer-Based Robotics	Advanced Robotics	Computer Vision	Cybersecurity
Natural Language Processing	Advanced Data Science	Data Mining	Machine Learning

Certificate of Engineering Leadership(May 2024): Studied the political, ethical, and philosophical principles for modern leadership in technology and developed practical skills for effective management.

SKILLS

Languages: Python, C, C++, C#, Java, Javascript, Scala, SQL, NoSQL, MongoDB, LTL
Technologies: Docker, Git, Heroku, ROS2, MATLAB, CUDA, OpenCV, PyTorch, TensorFlow