Andrew Gusty
499 Harvard Ln
Boulder, CO 80305
(719) 500-1315 • angu8719@colorado.edu • linkedin.com

EDUCATION

University of Colorado - Bachelor's of Science, August 2022 - May 2026

- Double Major: Applied Mathematics and Computer Science
- GPA: 3.896
  Relevant Mathematics Coursework: Real Analysis, Complex Analysis, Matrix Methods, Partial Differential Equations, Differential Equations, Calculus I-III, Markov Processes, and Applied Probability
  Relevant Computer Science Coursework: Theory of Computation, Quantum Algorithms, Advanced Data Science, Programming Languages, Computer Systems, Software Development, Intro to AI, Algorithms, and Data Structures

SCHOLARSHIPS AND HONORS

- Dean's List (Fall 2022 - Present)
- Engineering Honors Program Member (Fall 2022 - Present)
- CU General Engineering Scholarship (2022): Awarded to top applicants to the College of Engineering at CU ($32,000 over four years)
- Horace M. Hale Esteemed Scholar Award (2022): Awarded to select applicants to CU based on GPA, difficulty of coursework, and academic achievements ($16,000 over four years)

RESEARCH EXPERIENCE

University of Colorado, Department of Electrical Engineering
Undergraduate Research Fellow, June 2024 - Present
Advisor: Dr. Emily Jensen

- Selected for the Summer Program for Undergraduate Research at CU; accepted offer to continue as a research assistant based on summer contributions.
- Designed an open-loop control problem for soft-bodied crawling robots, using nonlinear PDEs, dimensional analysis, and perturbation theory to optimize speed and efficiency under realistic friction models.
- Delivered presentations to SPUR directors and research group; preparing work for upcoming submission to the 64th IEEE Conference on Decision and Control.
- Skills include Matlab, Python, control theory, nonlinear dynamics, perturbation theory, and partial differential equations

WORK EXPERIENCE

University of Colorado, Office of Information Technology
Assistant System Administrator, June 2022 - Present
Supervisor: Dylan Canfield

- Collaborates with a team of system administrators to manage the University of Colorado's Linux-based server system, tailor hosts to specific client needs, develop software for automation of tasks, and maintain security standards.
- Team utilizes Kanban project management methodology, stand-up meetings, and follows strict quality control and documentation standards.
- Primary technologies used are Python, Ruby, and Bash for software development - Ansible, Chef, Jenkins, and Nagios for configuration management.

SELECTED COURSE PROJECTS

Matrix Methods - Mean-Variance Portfolio Optimization

- Tested suggested improvements from recent publications to the classical model for Mean-Variance Portfolio Optimization. This paper received an A grade.
- Paper can be found at: MVP Project

Complex Analysis - Overview of Airfoil Design

- Studied airfoil design using conformal mappings and presented findings to Complex Analysis class. This project received an A grade.
- Paper can be found at: Complex Analysis Project

SERVICE

Walk to Defeat ALS - Denver
Event Volunteer, 2023 and 2024
Volunteered to set up, tear down, and provide logistical support for participants at the annual charity walk

Phi Delta Theta, LiveLikeLou Foundation Fundraising
Event Volunteer, Fall 2023 - Present
Volunteered at multiple fundraising events each semester, which raised over $10,000 for ALS research during the 2023-2024 school year.

EXTRACURRICULAR EXPERIENCE

COMAP - Mathematical Contest in Modeling (February 2024)

- Internationally recognized undergraduate applied math competition that takes place over 4 days. Worked in a team of three to derive and implement a mathematical model for momentum in sports.
- Paper can be found at: COMAP Paper

CU Robotics Club (August 2022 - May 2023)

- Worked as software developer on the perception team. Responsible for configuring remote graphical interface to data storage server for image labeling, image labeling system, selection of image recognition model, and training of model

TECHNICAL SKILLS

Programming Languages: Matlab, Python, C/C++, HTML/CSS/JavaScript, LaTeX, SQL, YAML, Scala, Ruby
Tools and Platforms: Git, Docker, Linux/Unix, Jupyter, Ansible, Chef