Amy Cao

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EDUCATION

Colorado School of Mines | Golden, CO

Bachelor of Science in Computer Science – Data Science Track | GPA: 3.9   Expected Dec 2026

Honors: Thorson First-Year Honors Program, Tau Beta Pi Engineering Honors Society

Nanyang Technological University | Singapore

GEM Trailblazer Exchange Program   Fall 2024

EXPERIENCE

Teaching Assistant, CSCI220: Data Structures & Algorithms   Aug 2025-Dec 2025

- Advise and mentor students during office hours, resolving specific challenges in data structures and object-oriented programming in C++.
- Pioneered the course's Generative AI policy by drafting a framework that encourages ethical use for conceptual learning and practice while explicitly prohibiting its use for generating assignment solutions

Student Consultant, Trefny Center   Apr 2025-Present

- Deliver live software demos and use-case scenarios to educate faculty on Generative AI capabilities, facilitating discussions on ethical considerations and academic limitations.
- Advocate for the student perspective to shape university policy on emerging Generative AI technology during expert Q&A sessions with 30+ faculty

LEADERSHIP & INVOLVEMENT

Senator for Academic Affairs, Undergraduate Student Government   Apr 2025-Present

- Liaise between the student body and university administration to advocate for undergraduate interests
- Collaborate with 20+ senators to draft amendments and build consensus for legislation passage.

Media Chair, Tau Beta Pi   Member since 2024; Chair Aug 2025-Present

- Coordinated safety and compliance logistics for an inaugural networking mixer for 80+ attendees.

PROJECTS

Predicting Pet Popularity (**Kaggle Competition**) | Python (TensorFlow, Scikit-learn)

- Developed and evaluated a diverse set of Machine Learning models including Deep Neural Networks with Keras/TensorFlow, and K-Nearest Neighbors to solve a regression task.
- Tuned hyperparameters via Randomized/GridSearchCV, selecting a Support Vector Machine that improved Kaggle ranking by approximately 10 percentile points.

Wine Quality Classification | Python (Scikit-learn, Pandas)

- Tested Random Forest and Decision Tree models to identify key chemical properties of wine quality.
- Addressed data skewness and outliers through log transformation and Robust Scaling (Scikit-learn), and performed EDA into the relationships between chemical properties and quality ratings.

Clue Game | Java

- Developed full-stack Java/Swing implementation of Clue board game, featuring interactive UI, game logic, and AI opponents for dynamic user-controlled gameplay
- Developed collaboratively in an Agile/Scrum environment, managing version control and feature integration through Git to streamline iterative development, coordinate tasks, and maintain a clear project history.

TECHNICAL SKILLS

Programming Languages: C/C++, Python, Java, SQL, R

Software, Tools & Environments: Gi/Github, Docker, Linux, VS Code, IntelliJ, PostgreSQL, Anaconda, Microsoft Excel