Colton Rowe

(707) 799-2363
coltonjack.rowe@gmail.com
coltonrowe.com

EDUCATION

Master of Engineering, Artificial Intelligence, University of California, Los Angeles   September 2025
Developed technical AI/ML and engineering management skills through projects and CS coursework.

Bachelor of Science, University of California, Santa Barbara   March 2024
Double major in Statistics and Data Science (BS) and Mathematics (BS).

SKILLS

Programming: Python, C++, R, SQL, JS, HTML. Pytorch, FastAPI, Scikit-Learn, Pandas, Numpy. Git, Docker.
Deep Reinforcement Learning: Q-learning, policy gradients, actor-critic methods, DDPG, PPO, A3C.
Deep Learning: Neural networks, CNNs, LSTMs, backpropagation, and optimizers including Adam.
Generative Modeling: Text and image generation with GANs, VAEs, transformers, and diffusion models.
Large-Scale ML: Distributed training, federated learning, neural network pruning, submodular set functions.
Statistics and ML: Linear regression, decision trees, random forests, gradient boosted trees. Time series models such as SARIMA, TAR, GARCH models. Markov chains, MDPs, brownian motion, continuous-time processes.
CAD, 3d Printing: Onshape, Fusion360, Ultimaker Cura, G-Code. Experience designing and printing 3d models.

PROJECTS

Agentic Data Sanitizer - *iDox.ai Capstone Project*   May 2025 – August 2025
FastAPI, Azure OpenAI, Javascript - coltonrowe.com
- Developed a full stack data loss prevention framework through a Chrome extension with a FastAPI backend.
- LLM-based agents increased redaction scope and accuracy over traditional regex methods.
- Communicated with company leadership to scope and deliver the finished product.

sEMG Signal Decoding using Deep Learning   January 2025 – March 2025
Python, Pytorch, emg2querty - coltonrowe.com
- Compared CNN, RNN, and LSTM hybrid models for keystroke decoding from sEMG using Stable-Baselines3.
- Found that the baseline CNN model outperformed the hybrid models, achieving a character error rate of 21.82.

Autonomous Driving RL with PPO in Metadrive   January 2025 – March 2025
Python, Pytorch, Stable-Baselines3 - coltonrowe.com
- Used proximal policy optimization to train autonomous driving agents in Metadrive environments.
- Maximized route completion while tuning hyperparameters like scenario count, clip range, and reward shaping.
- The best agent achieved 88% route completion and 70% success rate.

Neural Network Post-Pruning with Coreset Data Selection   September 2024 – December 2024
Python, Pytorch, CIFAR Datasets - coltonrowe.com
- Investigated how coreset data selection effects lottery ticket one-shot neural network pruning.
- Trained ResNet and LeNet models on CIFAR-10 and CIFAR-100 datasets over hyperparameters including post-pruning epochs and prune-percent.
- The fine-tuned models maintained 2% higher accuracy after 10 epochs, suggesting coreset selection reveals structural patterns.

Predicting IMDb Ratings with Streamlit and Scikit-learn   April 2023 – June 2023
Python, Streamlit — tv-popularity.netlify.app
- Built a predictive web app using Streamlit and Scikit-learn to estimate IMDb ratings, enabling users to input show attributes and receive a predicted popularity score.
- Scraped and parsed thousands of entries from Kaggle and IMDb, and engineered features to train a random forest, KNN, decision tree, and beta regression with an RMSE $\approx$ .197.

EXPERIENCE

Data Science Collaborative UCSB RCO   March 2023 – May 2024
Vice President
- Managed a group of 10 staff while planning weekly community events and workshops, guiding more than 30 students in creating personal data science projects.
- Developed and presented five skill-building lectures for statistics undergraduates.

Campus Learning Assistive Services UCSB   September 2023 – March 2024
Math Tutor
- Tutored dozens of math students for 8–10 hours weekly, specializing in calculus and linear algebra.