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Colton Rowe

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, JS, SQL, C++. Django, FastAPI, Pytorch, 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.

EXPERIENCE

iDox.ai, Agentic Data Sanitizer - *Capstone Project* May 2025 – August 2025
FastAPI, Azure OpenAI, Python, Javascript, HTML, CSS - 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.

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.

PROJECTS

CardPond: Live Data Analytics for MTG Decks April 2026 – Present
Django, SentenceTransformers, UMAP-Learn, Python, Javascript, HTML, CSS - cardpond (redirect)

- Developed a full-stack Django web application into production hosted on Sevalla with a PostgreSQL database.
- App clusters and visualizes card text using SentenceTransformers and UMAP dimensionality reduction.

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 - 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
Streamlit, Scikit-learn, Python — 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 $\approx .197$.