Dylan Rollins

dylanrollins@tamu.edu | dylanrollinss.github.io | github.com/dylanrollinss | linkedin.com/in/dylanarollins | 312-978-1122

Skills

Machine Learning: PyTorch, Numpy, SciKitlLearn, Pandas, reinforcement learning, neural networks
Math: Mathematical Statistics, Probability Theory, Linear Algebra, Differential Equations, Cryptography
Programming: R, Python, SQL, C++, JMP, Data Structures and Algorithms, Blockchain Technology
Statistics: Linear Models, Statistical Learning Theory, Design and Analysis of Experiments

Experience

Machine Learning Engineer & Sales Ops, DAAS Floors – Cypress, TX Apr 2020 – Present

- Devised and implemented a proprietary computer vision model based on a fine-tuned YOLOv5 that detects rooms on blueprints with up to 95% accuracy to exponentially speed up the project estimation pipeline.
- Secured and managed multiple commercial flooring projects that exceeded $1M in value.
- Boosted annual sales revenue by up to 50% each fiscal year by creating and executing sales proposals.

Research Assistant, Texas A&M University – College Station, TX Jan 2023 – Dec 2023

- Reduced defense vehicle network bandwidth strain by 50% using novel compression and interpolation algorithms.
- Optimized databases for fully automated defense land/sea/air vehicles to save money on a $200M Army R&D grant by implementing a clustering algorithm to dynamically sample GPS & altimeter data to reduce unnecessary samples.
- Coordinated replacing classical statistical models with SOTA deep learning models to allow biology researchers investigating mouse RNA gene expression to process a large dataset – the previously unparsable set of all RNA genes.
- Supported a research team that combined time-series analysis methods with modern ML methods (XGBoost, AdaBoost) to estimate stock prices using sentiment data from Twitter posts using Natural Language Processing.

Projects

Bitcoin Wallet Vulnerability Replication
Reverse-engineered and replicated the unreleased code from the Bitcoin Randstorm security vulnerability that was discovered by Unciphered LLC which exposed multiple billions of dollars worth of lost Bitcoin due to an insecure implementation of the elliptic curve digital signature algorithm implemented with a faulty JavaScript random number generator. Utilized multithreaded and multiprocessed Python integrated with a customized C++ codebase to replicate the vulnerability for security research.

Apple Security Research Bug Bounty
Discovered a security vulnerability that is currently confidential but will be addressed in an upcoming version of iOS.

Predicting Orbital Properties Using Coulomb Matrix
Lead a team that used exploratory data analysis to visualize molecules made from a list of elements and other variables and then utilized an array of machine learning models to predict their molecular energy given other variables. Personally created the most robust & accurate model with the highest R-squared, even after accounting for overfitting.

Python WebSockets API Trading Terminal
Utilized Python to create a WebSockets trading terminal that integrates with Kraken's API to allow backtesting and implementation of automated Bitcoin trading strategies and perform risk analysis before opening/closing positions. The platform allows you to quickly script and customize strategies, then immediately deploy them after backtesting.

Education

Texas A&M University – BS in Statistics, Computer Science Track Dec 2023