PRANAV AHLUWALIA

CONTACT INFO

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LINKS

Portfolio

Blog

Linkedin

GitHub

SKILLS

Machine Learning

Probabilistic Modeling

Algorithm Design

Linux

Git

Java

R

SQL

Python

C++

EDUCATION

MS Applied Mathematics, Northeastern University Boston

Sep 2021 — May 2023

GPA: 3.7, College of Science Scholarship

Courses: Probability I, Statistical Learning Theory, Point Estimation

BS Computer Science/Math, Northeastern University Boston

Sep 2017 — May 2022

Courses: Probability and Statistics, Stochastic Processes, Group Theory, Algorithms, Object Oriented Design, Differential Equations, Computational Logic, Computation Theory, Number Theory, Linear Algebra, Real Analysis, Calculus III, AI

EXPERIENCE

Software Engineer Co-op, AcadiaSoft Norwell, MA

Sep 2020 — Dec 2020

- Designed software infrastructure for **derivatives** risk management strategies
- Reduced margin call data latency by 15% to boost client-side performance
- Automated cleaning of **financial data** dealing with peer metrics/exposure/risk

Software Engineer Intern, Dell Technologies Hopkinton, MA

Jun 2020 — Jul 2020

- Constructed an internal cyber threat intelligence platform using **Python/Flask**
- Mapped 1,000,000+ emerging network vulnerabilities to model asset exposure
- Enhanced threat remediation by 20% through automated CVE risk analysis

Cyber Security Co-op, MITRE Bedford, MA

Jul 2019 — Dec 2019

- Developed command line parsing software for large-scale activity monitoring
- Created **Kibana dashboards** for 40% uptake in user-based anomaly detection
- Ported millions of server queries into a well organized elastic search database

Cyber Security Intern, MITRE Bedford, MA

May 2018 — Aug 2018

- Engineered an interactive visualization suite to process live radar signal data
- Performed **cluster analysis** on 500,000 compromised binaries across 8 factors
- Technologies used: **Python, R, SQL**

Research Mentorship Program, UCSB Statistics Dept. Santa Barbara, CA

Jun 2016 — Jul 2016

- Co-Authored research paper on ARIMA trading strategies

PROJECTS

Volatility Index Markov Model

- Designed a markov chain model to simulate the Volatility Index (VIX)

Greenhouse Harvest Prediction

- Developed a **kernel ridge regression** model to predict rose harvests

Monte Carlo Options Pricer

- Monte Carlo options pricer for vanilla call option using Black-Scholes