PRATIM CHOWDHARY

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Education

DARTMOUTH COLLEGE Hanover, NH
B.S Computer Science & Mathematics, **GPA: 3.8/4.0** September 2021- June 2025

- COSC 34: Randomized Algorithms
- COSC 62: Applied Cryptography
- COSC 74: Machine Learning & Stat Analysis
- MATH 30: Evolutionary Game Theory
- MATH 28: Combinatorics Theory
- MATH 60: Honors Probability Theory

Skills

Languages: Python, C++, Java, C

Technologies & Libraries: Operating System Design & Internals, Multithreading / Concurrency, Linux, Networking, MongoDB
AWS (EC2, Lambda, S3, SQS), Numpy, PyTorch, Pandas, HuggingFace

Professional Experience

Susquehanna International Group (SIG) Philadelphia, PA
Software Engineer Intern June 2023

- Incoming developer on Strategy Innovation team, using Python and C# to implement trading strategy

Dartmouth Machine Learning Lab Hanover, NH
Research Assistant December 2022 - Present

- Research centered in NLP bias, with paper titled: “Interpreting deep learning models in natural language processing”
- Analyzed impact of targeted adjective substitution based on emotion detection on StereoSet using results to refine BERT Stereotype Detection model using PyTorch to build neural networks

TakeOut7 (Integrated Online Ordering) Hartford, CT
Software Engineer Intern June 2022 - September 2022

- Built application to automate deployment of static websites for restaurants on AWS, using lambdas to register domains, load media content into S3 buckets, secure SSL certificates and deploy CDN on CloudFront
- Eliminated manual tasks and reduced the time to deploy customized websites from 1 week to less than 1 day saving marketing costs for 100+ restaurants in the Hartford, CT area

DALI Technical Lab Hanover, NH
Software Engineer December 2021 - November 2022

- Led backend development in a team of seven for two production cycles, eventually shipping an application used by emergency room residents to diagnose patients in the Dartmouth Hitchcock Medical Center
- Used Flask to build API routes with MongoDB for low latency object storage and JWT tokens for secure request handling deployed on the Heroku Cloud

Dartmouth Machine Learning Group Hanover, NH
Machine Learning Engineer January 2022 - June 2022

- Built data pipeline for cleaning and extracting useful features from dataset of over 1 million loans spanning 3 decades
- Researched multiple machine learning models including linear, forest, and neural network and eventually shipped loan prediction model to Advantage Capital with a 90%+ overall accuracy

Academic Projects

Project Euler (C++) **-** *Solved Collection of Challenging Mathematical / Computational Problems*

- Used dynamic programming, graph theory, linear algebra, combinatorics / probability theory, linear algebra etc to solve and optimize 50+ computational problems with highest difficulty problems having under 5000 accepted solutions

EC26 Art Exchange (Python) **-** *Real Time Trading Platform*

- Architected and implemented trading platform complete with order matching for demonstration of economics final project
- Built backend API using web sockets and atomic operations to match orders in real time and display live user portfolios, capable of handling over 100 trades per second

Shared Canvas (Java) **-** *Synchronized Canvas for Collaborative Drawing*

- Implemented a shared canvas using web sockets for streaming canvas state data across connected clients
- Used multi-threading to load and transmit canvas states concurrently with locks to protect against data corruption

Activities / Extracurriculars

COSC 31 Teaching Assistant - Algorithms Design and Analysis March 2023 - Present