Aadit Juneja

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EDUCATION

University of Pennsylvania M&T Program (Wharton/Engineering)   Philadelphia, PA
BS in Finance, BSE in Computer Science
Activities and Societies: Wharton Analytics Fellows, Wharton Investment and Trading Group Quantitative Strategies
Relevant Coursework: Graduate Machine Learning, Discrete Math, Scalable and Cloud Computing
GPA: 4.00

EXPERIENCE

Incoming Winter Quantitative Trading Intern   Jan 2025
Five Rings   *New York City, NY*

Data Science Consultant   Feb 2024 – May 2024
Petco   *Philadelphia, PA*
- Served as a data science consultant in team of 8 including undergraduates, graduate students, and MBA students at Penn over the span of a semester as part of the Wharton Analytics Fellows program
- Implemented CLIP Transformer architecture to develop vision-based sentiment insights on 308 Petco promotional emails and its relationship to click-through rate (CTR) to optimize email generation methods
- Built simulation pipeline for collecting CTR metrics off LLM-generated synthetic data from 10,000 user agents
- Built Retrieval Augmented Generation (RAG) model built on top of OpenAI GPT-4, Langchain, ChromaDB to generate promotional emails with average inference time of 22 seconds

Software Engineering Intern   May 2023 – Aug 2023
Haylon Technologies   *Remote*
- Achieved 92.15% accuracy in predicting switching times between types of batteries in drone battery packs using an AdaBoost classifier model created with Python's sklearn library
- Leveraged Amazon AWS tools such as S3, DynamoDB, and Sagemaker to train battery current prediction model. Achieved R^2 value of 0.91 with ensemble learning methods that leverage results from both deep learning and classical machine learning
- Collaborated with other interns to ensure secure data transfer from AWS S3 storage to AWS Sagemaker for model training

Research Intern   Jun 2022 – Aug 2022
Northwestern University McCormick School of Engineering   *Evanston, IL*
- Trained Faster R-CNN object detection model with VGG16 base in Tensorflow, resulting in 0.692 second average testing time and 76.91% recall rate using Google Open Images v6 dataset
- Collaborated with professor Wing Kam Liu and 5 PhD students throughout project and report; presented report at Northwestern conference and separate research symposium

PROJECTS

NETSApp
- Built social media application utilizing Node.js, Express backend, with Amazon AWS Relational Database Service (RDS)
- Utilized AWS EC2, Docker containers to manage compute resources, infrastructure, and development pipelines
- Implemented natural language search on posts and users with RAG based model using ChromaDB, Langchain, and GPT-3.5
- Used AWS S3, Multer for file management, KafkaJS to handle streaming of tweets from X API, React and Chakra Frontend

Proximal Policy Optimization (PPO) From Scratch
- Implemented proximal policy optimization (PPO) algorithm, a modern on-policy deep reinforcement learning algorithm.
- Utilized OpenAI gym, PyTorch to implement environment and deep neural networks for actor and critic, respectively.
- Trained actor model with surrogate objective combining clipped KL divergence term of policy with advantage estimate.

EZMuzik
- Developed frontend and backend of web app that provides information on user song queries using Spotify API.
- Leveraged Flask, SQLite for backend. Used React and Axios for backend. Bcrypt, PyJWT, and other libraries used for password hashing and authentication tasks.
- Trained neural network to conduct sentiment analysis on song title with Musical Sentiment (MuSE) dataset. Currently working on integrating model into web app.

SKILLS/AWARDS

Programming Skills: Python, Java, Javascript, React.js, Node.js, SQL, HTML/CSS, MongoDB/Mongoose, TailwindCSS, Redux, Tensorflow, Flask, C/C++, Amazon AWS
Languages: English, Spanish, Hindi
Awards: 4x American Invitational Math Exam (AIME) Qualifier, 2x Mathworks Math Modeling M3 Challenge Finalist (top 6/600 teams)