Mahitha Penmetsa

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Education

Cornell University, College of Engineering **Expected May 2026**
Bachelor of Science in Computer Science GPA: 3.98 *Ithaca, NY*
Relevant Coursework: OOP and Data Structures, Machine Learning, Probability & Statistics, Functional Programming, Linear Algebra, Optimization 1, Analysis of Algorithms, Robotics*, Computer System Organization*, Foundations of AI* * denotes in progress

Technical Skills

Languages: Java, Python, JavaScript/AngularJS, HTML, CSS, SQL, Ruby, Swift, OCaml, R
Tools and Frameworks: Oracle, Pytorch, AWS, Strata, Tensor Flow, Snowflake, Splunk, XCode, Jasmine, Excel, Git

Experience

Apple **May 2024 – Present**
Software Engineering Intern on Ads Platforms *Cupertino, CA*
- Migrate data from Oracle DB to PostgreSQL using AWS Glue to minimize downtime and maximize data integrity.
- Built SQL query generator tool for organization's 500+ relational tables database using LLMs with interactive UI

Fidelity Investments **June 2023 – August 2023**
Full-Stack Software Engineering Intern *Merrimack, NH*
- Developed business-wide styling pipeline integrating Fidelity design standards for 1300+ employees and 400+ partners.
- Excelled in Agile environment working with enterprise software, organizing Retros, and presenting to product owners.
- Setup starter code to move to headless content management system Tridion and integrate with existing web services.
- Migrated data transformation file search to AWS Athena to simplify backend monitoring for Integration Solutions team.

Activities

CS 2110 (OOP and Data Structures), ENGRD 2700 (Statistics) **January 2024 – Present**
Teaching Assistant *Ithaca, NY*
- Teach weekly review sessions with 25 students explaining fundamental concepts and planning interactive activities
- Work closely with students to prepare them for preliminary exams and guide them through complex projects

Cornell Data Science **October 2022 – Present**
Machine Learning Developer and INFO 1998: Intro to ML Teaching Assistant *Ithaca, NY*
- Develop a camera using Neural Networks and YOLO object detection to understand ASL signs and transcribe to users.
- Employ K Nearest Neighbors to develop algorithm that predicts user's movie preferences with scikit-learn and Pytorch.
- Lecture on topics like Visualization and Imputation for 70+ students. Grade work and provide individualized feedback.

Cornell Business Analytics **September 2022 – Present**
Project Manager, New Member Education Director, Analyst *Ithaca, NY*
- Lead and develop migration pipeline of Mar-Tech company's clients' data from Excel to interactive PowerBI dashboard.
- Develop a 10-week curriculum to teach over 30 new members SQL, Python, Tableau, and problem solving frameworks.
- Advise auto insurance company on customer retention strategy and analyzing distribution of recent customer base.

Girlplex Coding Nonprofit **November 2018 – Present**
Cofounder, Director *Downingtown, PA*
- Teach 1000+ students in 40+ 2 week summer camps code in Web Development, Python, Java, Ruby & career panels.
- Supported a 36% increase in female participation at Downingtown East High School's CS program as of May 2022.

Projects

MathSearch | *Sagemaker, DynamoDB, Python, Websockets, Lambda* **January 2024**
- Configured and optimized YOLOv8 model on AWS Sagemaker for equation detection in PDFs for scalability.
- Integrated DynamoDB with WebSockets for fast communication, storing connection and file IDs to retrieve results.
- Implemented API Gateway with SNS system to notify Lambda functions upon S3 uploads for frontend polling

HoopTracker | *Python, AWS S3 Buckets, FastAPIs, Docker* **November 2023**
- Automatically analyze basketball game videos implementing YoloV7 and BotSORT algorithm with posse estimation.
- Format Game Statistics and display results and videos through JSON file from Fast API calls and Dockerize project.
- Upgrade detection algorithm to YoloV7 and train on annotated dataset to increase processing speed by 8.4 times

Formula 1 Machine Learning | *TensorFlow, Python, Scikit-Learn, Beautiful Soup* **May 2023**
- Create XGBoost Classifier with Bayesian Optimization to predict top 3 unordered racers with a 65% accuracy.
- Frequently webscrape F1 website and modify the ERGAST API dataset with features on current race tracks and races
- Develop Monte Carlo simulations to understand the value of the system's predictions and the baseline accuracy.