

PRANAV DULEPET

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EDUCATION

B.S. in Computer Science - Machine Learning, University of Maryland, College Park Expected May 2025

Honors: Computer Science Honors, Dean's List

Programs: QUEST Honors (Quality Enhancement Systems and Teams), FIRE (First-Year Innovation and Research Experience) - Capital One Machine Learning Track, BMGT438A (Applied Quantitative Analysis) Teaching Assistant

SKILLS

Languages/Technologies Python, Java, C, Swift, MIPS, Ruby, Rust, OCaml, JavaScript, HTML, CSS, Git, AWS

Libraries/Frameworks TensorFlow, Keras, FastAPI, Pandas, MongoDB, Firebase, SQLite, React, Seaborn, Z3

EXPERIENCE

Software Engineer Intern

Jun 2023 - Aug 2023

Fidelity Investments

Durham, NC

- Built LinkedIn-like MyNetwork recommendation feature for the internal Fidelity app for around 80k employees
- Achieved average of 98% similarity scores for top 5 recommendations
- Used Python, PyTorch, NetworkX, Graph Neural Networks, Swift, SwiftUI, Neo4j

Undergraduate Researcher

Jan 2023 - Present

Perceptual Interfaces and Reality Laboratory at UMD

College Park, MD

- Developed iOS app using LiDAR scanner to create 3D representations of rooms and extract features
- Used to capture Room Impulse Responses to then use differentiable acoustics to learn acoustic coefficients
- Using Swift and Apple LiDAR devices, PyTorch, Python

Machine Learning Intern

Jan 2023 - May 2023

Capital One

College Park, MD

- Implemented [NMSLIB similarity search frameworks](#) on financial graph embeddings as part of the Enterprise Graph Services Team
- Applied to samples of up to 5 million in size with high-dimensional outputting >90 recall
- Using Python, NMSLIB, ANNOY, scikit-learn, GloVe

Software Engineer Intern

Jun 2022 - Aug 2022

Evozyne

Chicago, IL

- Researched and implemented [SMT solvers \(Z3\)](#) in Python to decrease runtime of modeling the Gene Synthesis process by 5x while maintaining precision
- Visualized Gene Synthesis data to determine where the current model lacked efficiency and precision using ligation matrices, statistical fidelity, and Seaborn plots
- Presented findings and work to upper management
- Utilized Python, SMT Solvers, Algorithm Design, Seaborn, Pandas

PROJECTS

agora *Large Language Models, Python, SwiftUI, Swift, AWS, MongoDB, Rest APIs, Google/Firebase Analytics*

Developed iOS app and fine-tuned LLM to provide personalized and affordable meals for college students. Adapted Stable Diffusion API to generate visuals. Integrated Amazon Fresh and Kroger API for option to buy ingredients. [\(link\)](#)

College RO *Swift, SwiftUI, Python, Node.js, Rest APIs, MongoDB, AWS, Google/Firebase Analytics*

Launched CollegeRO on the App Store helping college students find research opportunities, reaching a peak of 1k app units. [\(link\)](#)

LegalAI *Python, scikit-learn, spaCy, Elasticsearch, Textacy, Blackstone, pytextrank*

Trained and tested documents from the Supreme Court and other legal groups to apply NLP techniques such as Classification, Similarity, Summarization. Implemented TF-IDF, LDA, BM25, textrank, etc. units. [\(link\)](#)

Things Near Me *Full-Stack iOS Development, Swift, UIKit, Firebase*

Developed Things Near Me, for people to share the availability of supplies in the neighborhood, reaching a peak of 1.6K app units. [\(link\)](#)

Aerial Object Detector *Python, YOLOv5, PyTorch, Google Colab, GitHub*

Developed a prototype of a model that classifies harmful and non-harmful objects in the air. Won **1st place** at the Northrop Grumman Innovation challenge at the University of Maryland. [\(link\)](#)