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*
- Build LinkedIn-like MyNetwork recommendation feature for the internal Fidelity app for around 80k employees
- Achieved average of 98% similarity scores for top 5 recommendations
- Using 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

ArnoldAI *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)