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

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 - Present
Fidelity Investments — *Durham, NC*
- Building recommendation engine for internal social network and personalization features
- Using Python, TensorFlow, Transformer architecture, and Swift

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, Google/Firebase Analytics*
Developed model to provide dynamic and personalized health plans for users. Deployed website to collect feedback for RLHF. Mobile app coming soon. (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)