Nivedhitha Dhanasekaran

+1-(878)-834-9355| ndhanase@andrew.cmu.edu | linkedin/nivedhitha-dhanasekaran | github/nive927 | nive927.github.io

Education

Carnegie Mellon University Pittsburgh, PA
Master of Computational Data Science (MCDS) in **Analytics & Human-Computer Interaction** *Aug 2023 – May 2025*
GPA: *3.84/4.0* **Coursework**: Intro. to Deep Learning (PhD), On-Device Machine Learning, Cloud Computing, Design of AI Products, User-centered Research & Evaluation, **TA:** Interactive Data Science **Volunteering:** Foundation and Language Model (FLAME) Seminar

Sri Sivasubramaniya Nadar College of Engineering, Anna University Chennai, India
B.E. Computer Science & Engineering *Aug 2018 – Jul 2022*
GPA: *3.95/4.0* **Awards:** First Class with Distinction degree; Sem. Silver Medalist; Smart India Hackathon Winner (1L INR); Funded Underwater Robotics Team Lead [Winner of IEEE Contest] **Leadership:** C Programming Teaching Assistant; Newsletter Chief Editor; ACM Secretary

Technical Skills

Programming Languages/Databases: Python, C/C++, Java, Javascript, SQL, PostgreSQL, MongoDB, Scala, Unix
Data Platforms/Machine Learning: PyTorch, Spark, Databricks, Hadoop, Kafka, Tensorflow, Keras, Huggingface, pandas, numpy
Cloud/Web/Deployment/Observability: AWS, Azure, Helm, Terraform, Jenkins CI/CD, GCP, Docker, Kubernetes, wandb, streamlit, Git

Experience

Norstella (with Responsible, Resilient, Reliable, Language Interactive Technologies (R3LIT-LAB), CMU) Pittsburgh, PA
Machine Learning Research Intern | RESPONSIBLE AI & NLP *May 2024– Present*
- Developed an Automated Regulatory Compliance (ARC) system with LLMs to extract legal regulations (GDPR), filter policies, detect compliance violations, and suggest mitigation strategies, adapting for medical insurance use cases at Norstella and submitted a research paper for review to ACL.

Citi Chennai, India
Software Development Engineer | SOFTWARE & FULL STACK *Jul 2022 – Jun 2023*
- Streamlined RESTful APIs & data management for Angular applications, achieving increased operational efficiency and reduced cognitive load through responsive UI/UX design for the Cards and Customer Acquisition team across Singapore and Hong Kong markets.
- Set up automated deployment & observability processes using Jenkins CI/CD, AWS EC2, and PM2 for release cycles, actively contributing to code reviews, pair programming, and unit testing to ensure high-quality, scalable code.
- Developed a cloud-based investment portfolio optimization platform with Python, Flask, and MySQL, integrating multi-asset data ingestion and real-time visualizations, applying CAPM for optimal risk-return analysis deployed through Jenkins and Docker in a CI/CD pipeline.

Software & Societal Systems Department, Carnegie Mellon University Remote
Data Science Research Intern | DATA SCIENCE & MACHINE LEARNING *Jan – Jul 2022*
- Published the first ResNet-based automated detection system in PyTorch for Giant Cell Arteritis, achieving 91.65% accuracy in whole-slide inference, validating with GradCAM visualizations and pathologist review, and supporting NIH-funded AI research in pathology.
- Conducted a CDC-funded, blinded validation study on carbon nanotubes (CNT/F) toxicity using statistical analysis and clustering techniques, producing toxicity profiles from physical measurements and aligning results with in vivo/in vitro benchmarks through data visualization.
- Built a cross-platform mobile app, ApneaStat, using React Native and JavaScript to enable real-time sleep apnea diagnosis via Pulse Oximetry data; integrated Redux and D3.js for dynamic state management and data visualization.

Fidelity Investments Chennai, India
Full Stack Engineer Intern | AUTOMATION & ETL *Jun 2021 – Jul 2021*
- Deployed an automated ETL pipeline & a responsive Angular interface with custom data masking for electronic compliance report processing, migrating two clients to a secure, scalable cloud platform for streamlined data management and enhanced operational efficiency.
- Optimized SQL query performance through execution tuning and indexing, improving data retrieval speeds in high-volume operations.
- Automated ETL processes with Java, Oracle DB, Liberty Server & Jenkins CI/CD, implementing data ingestion scripts, record search automation, and data masking that reduced manual processing.

Publications

- **GraphEHR: Heterogeneous Graph Neural Network for Electronic Health Records** in IJCAI 2024.
- **Machine Learning Algorithm to Analyze Histopathologic Sections of Temporal Artery Biopsy Specimens** in ARVO 2023.
- **Localization Systems for Autonomous Operation of Underwater Robotic Vehicles: A Survey** in IEEE OCEANS Conference 2022.

Projects

- Sensemaking Co-pilot **(Jan 2024 - Dec 2024):** Built an LLM-powered web app benchmarked using A/B testing that enhances sensemaking by inferring users' expertise levels, offering personalized learning paths with curated resources and insights through optimized prompt engineering.
- **Cloud-deployed Twitter Recommendations Microservice (Jan - Apr 2024):** Developed highly performant, scalable, and low latency (< 50 ms) microservice using Docker, Kubernetes, Azure, and AWS while fulfilling strict client criteria for budget (< $0.7/hr) using Java, MySQL, and PySpark (Databricks) for ETL and query optimizations on 1TB of Twitter data.
- Music Magician Interactive Analytics Dashboard **(Oct - Dec 2023):** Developed an interactive visualization tool using Streamlit, Vega-Lite, Plotly, and NetworkX in Python, offering a dynamic exploration of Spotify data through storytelling for data-driven insights on artist influence on the evolution of music.
- Flight Delay Prediction **(Jan - Jun 2021):** Implemented a two-stage machine learning engine that accurately predicts possibility (classifier) & duration of flight delay (regressor) using real-time data from 15 USA airports, achieving a 0.977 R-squared score and 0.78 F1 score accounting for data imbalance with SMOTE in Python.