

Nivedhitha Dhanasekaran

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Education

Carnegie Mellon University Pittsburgh, PA
Master of Computational Data Science (MCDS) Aug 2023 – May 2025
Coursework: [Intro. to Deep Learning \(PhD\)](#), [Foundations of Data Science](#), [User-centered Research & Evaluation](#), [Cloud Computing](#), [Machine Learning](#) TA: [Interactive Data Science](#) **Dual Concentration:** Analytics & Human-Computer Interaction

Sri Sivasubramaniya Nadar College of Engineering, Anna University Chennai, India
B.E. Computer Science & Engineering Aug 2018 – Jul 2022
GPA: 9.345/10.00 Awards: First Class with Distinction degree; Sem. Silver Medalist; [Smart India Hackathon Winner](#) (1L INR); [Funded Underwater Robotics](#) [[Winner of IEEE Contest](#)] Leadership: [C Programming TA](#); [Newsletter Editor](#); ACM Secretary

Technical Skills

Programming Languages: Python (Proficient), C/C++ (Intermediate), Java (Competent), Javascript (Competent)
Machine Learning: PyTorch, pandas, numpy, scikit-learn, Tensorflow, Keras, NLTK, wandb, streamlit, vega-altair
Cloud/Web/Tools: AWS, Azure, GCP, Flask, SQL, MongoDB, Databricks, PySpark, Scala, Neo4j, Docker, Kubernetes, Git

Experience

Citicorp Services India Private Limited Chennai, India
Software Engineer | SOFTWARE & WEB DEVELOPMENT Jul 2022 – Jun 2023

- Implemented and enhanced several API features and streamlined data management for Angular-based applications, achieving a 20% increase in operational efficiency and significantly reducing cognitive load in website UI/UX design for the Cards and Customer Acquisition Team across Singapore and Hong Kong markets.
- Developed a cloud-based cross-asset investment portfolio optimization platform prototype using Python, Flask, and MySQL, incorporating multi-asset data ingestion and dynamic visualizations, leveraging the Capital Asset Pricing Model for optimal risk-return management, and automated deployment through a CI/CD pipeline with Jenkins and Docker.

Carnegie Mellon University Remote
Data Science Research Assistant | 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 with GradCAM visualizations for interpretability, validating the study design, dataset randomization, and results with two expert pathologists. [[Poster](#)]
- Conducted a comprehensive blinded validation study to determine the toxicity of a novel species of carbon nanotubes/fibers (CNT/F) through characterization using advanced clustering methods and interactive data visualization in Python.
- Developed a cross-platform mobile application interface for ApneaStat, using React Native, to leverage data from a PulseOx wearable device for real-time, bedside diagnosis of Sleep Apnea, enhancing patient access to diagnostic insights.

Fidelity Investments Chennai, India
Full Stack Engineer Intern | AUTOMATION & ETL Jun 2021 – Jul 2021

- Developed and deployed a new automated ETL pipeline and custom masking feature for electronic compliance reports, leveraging Java, Oracle DB, Liberty Server, and Angular, enabling seamless migration for two major customers to a new software platform and enhancing compliance processing and reporting.

Publications

- GraphEHR: Heterogeneous Graph Neural Network for Electronic Health Records:** UNDER REVIEW in the International Joint Conference on Artificial Intelligence (IJCAI) 2024
- Machine Learning Algorithm to Analyze Histopathologic Sections of Temporal Artery Biopsy Specimens** in the Association for Research in Vision and Ophthalmology Conference 2023 [[Link](#)]
- Localization Systems for Autonomous Operation of Underwater Robotic Vehicles** in IEEE OCEANS Conference 2022 [[Link](#)]

Projects

- LLMs for Sensemaking: Comprehensive and Contextualized Information Synthesis (Jan 2024 to Present):** Developing a browser extension using LLMs to enhance online sensemaking by enabling users to efficiently synthesize and visualize data from multiple sources with personalized, context-aware prompt engineering and feedback mechanisms for continuous learning. [[Repo](#)]
- Cloud-deployed Twitter Analytics Platform (Jan 2024 to Present):** Developed highly performant, scalable, and low latency (< 50 ms) microservices for QR code authentication and Twitter User Recommendations using Docker, Kubernetes, Azure, and AWS while fulfilling strict client criteria for budget (< \$0.7/hr) using Java, MySQL, and PySpark (Databricks) for ETL 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 to enable users to engage with data-driven insights on trends, artist impact, and song characteristics over time, fostering a deeper understanding of the interplay between music evolution and artist influence. [[Link](#)][[Repo](#)][[Video](#)]
- BrailleVoice: A Language Agnostic Assistive Technology for Braille-to-Text Translation (Nov 2021 - Jul 2022):** Implemented an assistive technology, enabling seamless whole-page Braille-to-text translation and text summarization in English and Tamil, complete with text-to-speech functionality, across a versatile mobile and web app platform for comprehensive accessibility. [[Poster](#)]
- 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. [[Report](#)] [[Repo](#)]