Vasudev Menon

919-798-7081 | vmenon2@ncsu.edu | vmenon04.github.io | linkedin.com/in/vmenon04 | github.com/vmenon04

Education

North Carolina State University — Raleigh, NC

B.S. in Computer Science and B.S. in Mathematics | Cum. GPA: 4.0/4.0 — *Expected Spring 2026*

- Minor: Music Studies
- Coursework: Combinatorics, Real Analysis, Linear Algebra, Software Development, C Programming, Data Structures and Algorithms, Operating Systems, Calculus I/II/III + Differential Equations, Discrete Mathematics
- Honors and Awards: Phi Beta Kappa, Dean's List All Semesters

Experience

Software Engineer Intern — June 2024 – August 2024

Fidelity Investments — *Durham, NC*

- Engineered an enterprise assessment system used by 4,000+ company leads to evaluate application reliability
- Implemented a dashboard integrated with Power Platform API
- Built and deployed Backstage developer portal plugins in Node.js and TypeScript, enhancing internal tooling
- Utilized Docker for DevDocs integration to provide documentation for users

Undergraduate Deep Learning Research Intern — May 2023 – August 2023

North Carolina State University — *Raleigh, NC*

- Automated deep learning experiments with shell scripting, optimizing batch normalization analysis on GPU clusters
- Trained models demonstrating reduced training time for batch-normalized networks on GPUs
- Conducted data analysis for NSF-funded project and aided in design of statistical experiments
- Conducted literature reviews and integrated relevant findings into ongoing research

Data Science Intern — June 2021 – Feb. 2022

Rice University and North Carolina State University — *Raleigh, NC*

- Conducted research on an NSF-funded project to analyze and extrapolate COVID-19 sequence data using R
- Utilized numerous state-of-the-art statistical algorithms to examine DNA sequence data
- Analyzed 100K+ COVID-19 strains using statistical models, uncovering key genomic differences
- Presented research at the Junior Science and Humanities Symposium

Projects

Exploring Differential Privacy in Federated Learning | *Python, Flower, Machine Learning*

- Researching Distributed Differential Privacy (DDP) in Federated Learning (FL)
- Analyzing trade-offs between privacy, model accuracy, and computational overhead in privacy-preserving FL
- Implementing FL frameworks like Flower to develop optimized privacy strategies
- Collaborating with Dr. Olivera Kotevska (Oak Ridge National Laboratory) and Dr. Mansoor Haider (NCSU)

LocusListings.com: Real Estate Listing Website (*Archived*) | *AWS, React, Django, Azure*

- Developed a fully functional real estate listing website that curated rental properties based on user preferences
- Implemented a user-friendly interface with property search functionality, allowing users to filter listings dynamically
- Designed and integrated an algorithm to rank properties based on user preferences and search trends
- Deployed application on AWS Elastic Beanstalk and maintained cloud-based API integrations
- Previously Live at locuslistings.com

EmoNet: Emotion Detection with Deep Learning | *Tensorflow, Keras, OpenCV, Git*

- Designed and implemented a Convolutional Neural Network (CNN) architecture for emotion classification
- Used TensorFlow and Keras on a GPU platform
- Integrated OpenCV to enable users to input their own facial data for real-time emotion analysis
- GitHub: github.com/vmenon04/EmoNet

Technical Skills

Languages: Python, Java, C/C++, R, PowerShell, SQL
Tech/Tools: Git, React, Eclipse, MySQL Workbench, Jenkins, RStudio, R Tools, Visual Studio Code, JUnit, Flask, Streamlit, Power Platform, Docker, RestAPI, LaTeX
Libraries: Flower, Django, FastAPI, Flask, TensorFlow, Keras, Pandas, NumPy, PyTorch, Matplotlib, Cryptography, Selenium
Generic Competencies: HTML, CSS, Microsoft Suite, G Suite