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EDUCATION

University of Pittsburgh, Pittsburgh, PA
Master of Science in Computer and Information Sciences — GPA: 3.95
Aug. 2023 – Apr. 2025
Relevant Coursework: Algorithms, Data Mining, Machine Learning, Neural Networks, Cloud Computing, Data Analytics, Information Security and Privacy, Human Computer Interaction

Manipal Institute of Technology, Manipal, India
Bachelor of Science in Computer Science and Communication Engineering, Minor: Big Data
Aug. 2019 – May 2023
Relevant Coursework: Data Structures, Databases, Operating Systems, Big Data, Data Mining, Computer Networks and Network Programming, Computer Architecture, Web & App Development, Pattern Recognition

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RESEARCH EXPERIENCE & PUBLICATIONS

Liver Disease Prediction Using Ensemble Technique
8th International Conference on Advanced Computing and Communication, 2022
Explored ensemble learning methods for classifying liver disease and improving diagnostic accuracy.

Fake News Classification Using LSTM and GRU Networks
International Conference on Futuristic Technologies (INCOFT), 2022
Implemented deep learning techniques for reliable fake news classification using LSTM and GRU models.

Integration of Feature Selection Techniques Using a Sleep Quality Dataset
arXiv / SSRN, 2023
Analyzed regression models and feature selection approaches to evaluate factors affecting sleep quality.

An Indispensable Contemplation on NLP Using Ensemble Techniques for Text Classification
8th International Conference on Advanced Computing and Communication, 2022

Collaborated on developing ensemble methods for text classification tasks, enhancing model robustness in NLP.

Wine Variety Detection: An NLP-Based Approach
Explored transformer-based NLP models to predict wine variety based on tasting notes using text classification methods.

Retinal Image Preprocessing for Ophthalmic Analysis
Manipal Institute of Technology
Worked with a faculty mentor to preprocess retinal scans for downstream machine learning pipelines. Tasks included contrast enhancement, noise reduction, and preparing datasets for classification.

RESEARCH INTERNSHIPS

Artificial Intelligence Research Intern
Larsen & Toubro, Chennai, India — Jun. 2022 – Aug. 2022

- Trained and fine-tuned YOLO-based computer vision models for pedestrian detection, enhancing model accuracy by 10%.
- Applied deep learning and GIS tools to satellite imagery analysis, automating workflows to reduce manual processing.
- Contributed to LiDAR-based remote sensing projects, enabling real-time visualization and faster environmental data interpretation.

RECENT PROJECTS

Fine-Tuning LLaMA and DeepSeek for SQL Generation
Developed fine-tuning workflows for SQL query generation using LLaMA and DeepSeek models; improved correctness of generated SQL queries.

Urban Insights: NYC Land Use, Infrastructure, and Accessibility Analysis
Built an integrated visualization of New York City's land use, building heights, POI density, and transit access using KDE, heatmaps, and interactive charts. Leveraged GIS and urban data to assess spatial equity across boroughs. Included subway access overlays and POI clustering metrics.

Stock Movement Prediction Using Rule-Based Learning
Developed rule-based models using stock price indicators (EMA, RSI, Volume, Dividends, etc.) to predict whether the next day's opening price would exceed the current day's closing price. Built a Python system to parse stock features and apply optimized rules for prediction, with a custom evaluator on unseen test data.

Music Transcription, Style Transfer, and Decomposition Using Linear Algebra
Applied SVD and non-negative matrix factorization to decompose and transcribe music signals from spectrogram data. Transferred musical style from one instrument to another using linear transformation. Reconstructed the audio to validate predictions using STFT and inverse STFT methods in Python.

MyTorch: Custom Deep Learning Framework
Built a neural network library from scratch implementing MLPs, CNNs, GRUs, and LSTMs; optimized backpropagation and loss functions for sentiment classification tasks.

Blockchain-Based Data Integrity System
Engineered a distributed integrity-check system using Ethereum blockchain and Merkle Trees for verifiable data storage.

TEACHING EXPERIENCE

Course Facilitator and Teaching Assistant
University of Pittsburgh — Jun. 2024 – Present

- Redesigned Python-based autograder systems for Coursera assignments, reducing TA workload by 30%.
- Supported over 140 students via office hours, feedback sessions, and 1-on-1 guidance to enhance course understanding.

Tutor for Undergraduate Students
University of Pittsburgh — 2023 – Present

- Provided one-on-one and group tutoring in Data Structures, Algorithms, Databases, and Mathematics.
- Helped improve academic performance and conceptual understanding for undergraduate students through personalized support and problem-solving sessions.

TECHNICAL SKILLS

Languages: Python, Java, C/C++, SQL, R, JavaScript, Shell Scripting
Frameworks & Libraries: PyTorch, TensorFlow, Scikit-Learn, OpenCV, FastAPI, React.js
Big Data & Cloud: AWS, Spark, Hadoop, Docker, CI/CD, PostgreSQL, MongoDB
Specializations: NLP, Computer Vision, Distributed Systems, Optimization, ETL Pipelines