Tanmay Kulkarni

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Education

Master of Science in Computer Science   Aug 2024 – Jun 2026
Indiana University, Luddy School of Computing and Informatics, Bloomington   (Expected)
Relevant Coursework: Applied Algorithms, Applied Machine Learning, Data Mining

Bachelor of Engineering in Artificial Intelligence and Machine Learning   May 2020 – Jun 2024
Savitribai Phule Pune University, PES Modern College of Engineering, Pune   GPA: 3.46
Relevant Coursework: Data Structures and Algorithms, Web Technology, Object Oriented Programming,
Artificial Neural Networks, Distributed Systems, Database Management Systems, Cloud Computing

Technical Skills

- **Programming Languages:** Python, C, C++, Java, JavaScript, TypeScript, HTML, CSS, Bash, Shell, Kotlin, GLSL
- **Databases:** MongoDB, NoSQL, MySQL, SQL
- **Operating Systems:** Linux, Windows
- **Frameworks:** TensorFlow, Keras, PyTorch, Node.JS, ExpressJS, React Native, ReactJS, Matplotlib, NumPy, Pandas, NLTK, AndroidSDK, GLEW, GLFW, Scikit-Learn, OpenGL, Angular
- **Certifications:**
  - **Coursera:** Machine Learning Specialization, Deep Learning Specialization
  - **Udemy:** Web Development Bootcamp
  - **AWS Academy:** Machine Learning Foundations, Cloud Foundations
- **IDEs and Tools:** Visual Studio Code, IntelliJ Idea, Android Studio, Microsoft Office Suite (Excel, Word, PowerPoint), Google Workspace Suite (Docs, Sheets, Drive), Visual Studio, REST API, Maven, Gradle, CMake, Git, Docker, Jupyter Notebook

Experience

Machine Learning Intern, YBI Foundation, India   Feb 2023 – May 2023
Technologies Used: Python, Jupyter Notebook, Matplotlib, Pandas, NumPy
- Constructed machine learning models for predictions over an internal dataset of over 10, 000 entries
- Engineered sophisticated machine learning models using decision trees and regression analysis to find 5 correlations
- Created and showcased interactive performance dashboards for trained models to identify areas for improvement
- Optimized the best performing machine learning model from 64% to 95% accuracy

Projects

Neural Network
Technologies Used: Python
- Developed an object-oriented backpropagation neural network with zero third-party dependencies
- Designed and modelled a modular structure to allow any number of layers and nodes in each layer based on the complexity of the dataset
- Devised a system that allows choosing any desired activation function for each layer
- Designed the library to make adding more activation functions and optimization techniques easier, with 4 activation and 2 loss functions already implemented
- Optimized and refined the library to make it on par with PyTorch, both achieving 96% accuracy with the same configuration on the MNIST dataset

CareerSpeak
Technologies Used: React Native, Docker, Python, Flask, Node.JS, ExpressJS, MySQL, REST API
- Guided and coordinated a team of 4 members to create an application supporting web browsers, and natively, Android and iOS to provide grammar checking, voice-based interviews, and job recommendations based on extracted keywords
- Spearheaded a microservices architecture to ensure reliability and fault resiliency of the system, with 10 such services
- Utilized LanguageTool for grammar processing and a transformer for paraphrasing, and the WhisperAI Large Language Model (LLM) for transcribing speech to text, which achieved around 95% accuracy
- Crafted a seamless user interface with responsive elements to support the web and native platforms, with support for dark and light themed modes to ensure a user-friendly interface