Vamsi Deeduvanu

(765)-694-9091 | vamsi10010@gmail.com | linkedin.com/in/vamsideeduvanu/ | github.com/vamsi10010

Education

Purdue University Aug. 2022 – May 2025 (exp.)
Bachelor of Science in Computer Science and Data Science *West Lafayette, IN*

- *Coursework*: OOP, Calculus, Linear Algebra, Statistics, Data Structures and Algorithms, Computer Architecture, Machine Learning, Systems Programming
- *Clubs and Extracurriculars*: ML@Purdue, Purdue Astronomy Club, Intramural Soccer
- *Honors*: Dean's List and Semester Honors (Fall 2022, Spring 2023, Fall 2023)
- *GPA*: 4.0/4.0

Experience

Undergraduate Researcher Aug. 2023 – Dec. 2023
Purdue Vertically Integrated Projects *West Lafayette, IN*

- Collaborated with local industry partners to establish an IIoT-based smart machine monitoring framework to improve manufacturing efficiency.
- Developed a data pipeline to collect and process real-time machine data from MTConnect agents.
- Labelled and annotated sensor data to train a deep learning model to predict chatter and other failures.
- Awarded 2nd Best Poster for presentation at 2023 Fall Undergraduate Research Expo.

Undergraduate Teaching Assistant Aug. 2023 – Present
Department of Computer Science, Purdue University *West Lafayette, IN*

- Provided instructional assistance as TA to students in CS 24000 (Programming in C) and CS 19300 (Tools).
- Enhanced student's learning outcomes by conducting weekly lab sessions and office hours for 40+ students.
- Actively monitored online discussion forums to resolve student's questions outside of class.

Data Science Researcher Aug. 2022 – May 2023
Battelle *West Lafayette, IN*

- Researched hyperband and population-based training algorithms to tune hyperparameters of NLP models.
- Fine-tuned an LLM from HuggingFace to accurately identify adverse drug events in electronic health records.
- Boosted overall f1 score by more than 20% using hyperparameter tuning algorithms from RayTune.
- Established a successful standard operating procedure for hyperparameter tuning as reference for future projects.
- Presented research poster at The Data Mine Symposium and demonstrated entity recognition on a live document.

Projects

cgrad | *C, cmocka, Deep Learning* Aug. 2023 – Present

- Programmed a lightweight backpropagation and neural network library for deep learning in C.
- Optimized memory usage during model training by managing heap space with dynamic memory allocation.
- Successfully classified handwritten digits with 96% accuracy, using less than 2GB of memory during training.
- Automated testing process and ensured functionality by creating unit tests using cmocka framework.

YourCollege | *Python, Scikit-Learn, Pandas, Streamlit* Jan. 2023 – Present

- Developed a college recommender application to assist high school students in college search.
- Collected data from multiple sources and performed data cleaning and feature engineering for classification.
- Trained an unsupervised learning model to classify colleges tailored to every user's preferences.
- Built and deployed application on web through Streamlit to make it accessible to users.

Time Series Forecasting | *Python, Statsmodels, Pandas, Keras, Streamlit* Sep. 2022 – May 2023

- Created a dashboard to accurately predict air pollution levels using time series forecasting techniques.
- Achieved high accuracy rates by implementing ARIMA and LSTM models to predict PM-10 levels.
- Designed an interactive dashboard to visualize predictions and provide valuable insights to users.

Skills

Languages: Python, C, C++, Java, SQL (Postgres), R, LaTeX, x86-64 Assembly
Developer Tools: Git, Bash, Linux, VS Code, Jupyter, JetBrains, MTConnect, Agile Methodologies, XML
Libraries: PyTorch, HuggingFace, Keras, RayTune, Scikit-Learn, Streamlit, Pandas, NumPy, Matplotlib