

Vamsi Deeduvanu

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EDUCATION

Purdue University

Aug. 2022 – May 2025 (exp.)

Bachelor of Science in Computer Science and Data Science

West Lafayette, IN

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

EXPERIENCE

Undergraduate Researcher

Aug. 2023 – Present

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