Vamsi Deeduvanu

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Education

Purdue University Aug. 2025 – May 2026
Masters of Science in Computer Science *West Lafayette, IN*

Purdue University Aug. 2022 – May 2025
Bachelor of Science in Computer Science and Applied Statistics *West Lafayette, IN*

- *Coursework*: OOP, Calculus, Linear Algebra, Statistics, Data Structures and Algorithms, Computer Architecture, Machine Learning, Systems Programming
- *Honors*: Dean's List and Semester Honors, L3Harris Scholarship, Poster Award at UG Research Expo
- *GPA*: 4.0/4.0

Experience

AI/ML Intern May. 2024 – Present
Volvo Group *Hagerstown, MD*

- Designed an end-to-end edge computer vision pipeline to track truck service on factory floor using YOLOv8n and PaddleOCR. Leveraged Thingworx API to store and visualize truck service information in real-time.
- Integrated data from turbo-compound engine manufacturing lines to Thingworx platform to identify bottlenecks, improve part traceability, and display visualizations on factory floor in real-time.

Undergraduate Teaching Assistant Aug. 2023 – May. 2024
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.

Undergraduate Researcher Aug. 2023 – Dec. 2023
TinyML/IIoT, Purdue University *West Lafayette, IN*

- Collaborated with local industry partners to establish a low-cost IIoT-based machine monitoring framework.
- Developed a data pipeline to collect and process real-time machine and sensor data using MTConnect.
- Labelled and annotated sensor data to train a deep learning model to predict machining failures.

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

- Conducted research on hyperparameter tuning algorithms for LLMs and established an SOP for future projects.
- Fine-tuned BioBERT from HuggingFace to accurately identify adverse drug events in electronic health records.
- Boosted overall f1 score by more than 20% using hyperband and population-based algorithms from RayTune.

Projects

DuetDanceMotion | *Python, PyTorch, SMPLX, Blender* May. 2024 - Present

- Investigated generative models for synthesizing realistic human dance motion using text prompts and music cues.
- Collected more than 6 hours of motion capture data of professional dancers to train generative models.
- Developed a pipeline to convert mocap data to SMPLX format and visualize using Blender.

hirehack | *Python, JavaScript, PyTorch, HuggingFace, PRAAT, WebSpeech API* Jan. 2024 - Feb. 2024

- Developed a Chrome extension to automatically analyze interview performance and provide feedback.
- Integrated facial emotion, prosodic, and lexical features into a multi-modal model to score interview performance.
- Interfaced Mixtral-7B from HuggingFace API to interpret model output and generate feedback in real-time.

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, JavaScript, LaTeX, x86-64 Assembly
Developer Tools: Git, Bash, Linux, MTConnect, XML, Azure DevOps, Thingworx, Agile Methodologies
Libraries: PyTorch, HuggingFace, Keras, Ultralytics, RayTune, Scikit-Learn, Streamlit, Pandas, NumPy, Matplotlib