

# Vamsi Deeduvanu

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## EDUCATION

<b>Purdue University</b> <i>Masters of Science in Computer Science</i>	Aug. 2024 – May 2026 West Lafayette, IN
<b>Purdue University</b> <i>Bachelor of Science in Computer Science</i>	Aug. 2022 – May 2025 West Lafayette, IN
<ul style="list-style-type: none"><li>• <i>Coursework:</i> OOP, Calculus, Linear Algebra, Statistics, Data Structures and Algorithms, Computer Architecture, Systems Programming, Machine Learning, AI, Robotics</li><li>• <i>Honors:</i> Dean's List and Semester Honors, L3Harris Scholarship, Poster Award at UG Research Expo</li><li>• <i>GPA:</i> 4.0/4.0</li></ul>	

## EXPERIENCE

<b>Undergraduate Teaching Assistant</b> <i>Department of Computer Science, Purdue University</i>	Aug. 2023 – Present West Lafayette, IN
<ul style="list-style-type: none"><li>• Provided instructional assistance to students in CS 240 (Programming in C) and CS 252 (Systems Programming).</li><li>• Curated weekly programming assignments to improve coding skills and tested grading modules for accuracy.</li><li>• Enhanced student learning outcomes by conducting weekly lab sessions and office hours for 40+ students.</li></ul>	
<b>AI/ML Intern</b> <i>Volvo Group</i>	May. 2024 – Aug. 2024 Hagerstown, MD
<ul style="list-style-type: none"><li>• Designed an edge AI pipeline to track truck service on factory floor using YOLOv8n and PaddleOCR models.</li><li>• Developed a live web interface using Streamlit to monitor KPIs such as truck count and takt time on-site.</li><li>• Utilized Azure ML Studio conduct labeling, automate model training, and generate containers for deployment.</li><li>• Leveraged VAR and LSTM models to forecast service requests to reduce downtimes and improve service efficiency.</li></ul>	
<b>Undergraduate Researcher</b> <i>TinyML/IIoT, Purdue University</i>	Aug. 2023 – Dec. 2023 West Lafayette, IN
<ul style="list-style-type: none"><li>• Collaborated with local industry partners to establish a low-cost IIoT-based machine monitoring framework.</li><li>• Developed a data pipeline to collect and process real-time machine and sensor data using MTConnect.</li><li>• Labelled and annotated sensor data to train a deep learning model to predict machining failures.</li></ul>	
<b>Data Science Researcher</b> <i>Battelle</i>	Aug. 2022 – May 2023 West Lafayette, IN
<ul style="list-style-type: none"><li>• Conducted research on hyperparameter tuning algorithms for LLMs and established an SOP for future projects.</li><li>• Fine-tuned BioBERT from HuggingFace to accurately identify adverse drug events in electronic health records.</li><li>• Boosted overall f1 score by more than 20% using hyperband and population-based algorithms from RayTune.</li></ul>	

## PROJECTS

<b>UNIX Shell</b>   <i>C, C++, Flex, Bison, UNIX</i>	Jan. 2024 - May. 2024
<ul style="list-style-type: none"><li>• Built a UNIX shell interpreter with support for complex command parsing and subshell execution.</li><li>• Integrated wildcard expansion using C++ regex to execute commands on multiple files simultaneously.</li><li>• Designed a feature rich line editor supporting command history, path completion, and prompt customization.</li></ul>	
<b>hirehack</b>   <i>Python, JavaScript, PyTorch, HuggingFace, PRAAT, WebSpeech API</i>	Jan. 2024 - Feb. 2024
<ul style="list-style-type: none"><li>• Developed a Chrome extension to automatically analyze interview performance and provide feedback.</li><li>• Integrated facial emotion, prosodic, and lexical features into a multi-modal model to score interview performance.</li><li>• Interfaced Mixtral-7B from HuggingFace API to interpret model output and generate feedback in real-time.</li></ul>	
<b>cgrad</b>   <i>C, cmocka, Deep Learning</i>	Aug. 2023 – Sep. 2023
<ul style="list-style-type: none"><li>• Created a lightweight neural network library from scratch in C achieving 96% accuracy on MNIST dataset.</li><li>• Programmed support for layers, activation functions, gradient descent methods, and regularization options.</li><li>• Automated testing process and ensured functionality by creating unit tests using cmocka framework.</li></ul>	

## 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, PySpark, Tensorflow, Plotly