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 Sports
- *Honors*: Dean's List and Semester Honors (Fall 2022, Spring 2023)
- *GPA*: 4.0/4.0

Resonance Junior College   June 2020 – May 2022
Intermediate   *Hyderabad, India*
- *JEE Mains*: 99.49th percentile all India
- *Intermediate Public Examinations*: 98.2%

EXPERIENCE

Undergraduate Data Science Researcher   Aug. 2022 – May 2023
The Data Mine, Purdue University   *West Lafayette, IN*
- Partnered with Battelle on researching hyper-parameter optimization procedures for NLP models.
- Fine-tuned a BERT model from the HuggingFace library to recognize adverse drug events from electronic health records.
- Applied hyperband and population-based training algorithms from the RayTune library to tune hyperparameters and improved overall f1 score by more than 20%.
- Presented results in weekly sprint meetings with client and established a standard operating procedure as a reference for future projects.

PROJECTS

cgrad | *C, cmocka, Deep Learning*   Aug. 2023 – Present
- Programmed a lightweight C library to support backpropagation for optimizing neural networks.
- Implemented a directed acyclic graph to represent computational graph of a neural network and perform reverse auto-differentiation in runtime to calculate gradients.
- Designed a simple ANN library that supports multiple layers, activation functions, gradient descent with momentum, and regularization.
- Applied cgrad to train neural network to classify handwritten digits from MNIST dataset.
- Created unit tests for library using cmocka to streamline testing process.

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 algorithm to create unique a classification of colleges and recommendations for every user based on their personal preferences.
- Built and deployed application on web through Streamlit to make it accessible to users.

Time Series Forecasting | *Python, Statsmodels, Pandas, Keras, Matplotlib*   Sep. 2022 – May 2023
- Collaborated with members of ML@Purdue to forecast PM-10 pollution levels in California.
- Implemented an ARIMA model from statsmodels library and an LSTM model from Keras to predict PM-10 levels and compared results.
- Researched causes of pollution in California and presented results at club standup meetings.

SKILLS

Languages: Python, C, Java, SQL (Postgres), R, LaTeX
Developer Tools: Git, Bash, VS Code, Jupyter, PyCharm, IntelliJ
Libraries: PyTorch, HuggingFace, Keras, RayTune, Scikit-Learn, Streamlit, Pandas, NumPy, Matplotlib
Other Skills: Agile Development, Technical Writing, Communication, Leadership, Teamwork