Phaneendra Babu Gunturu
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EDUCATION

Purdue University **GPA: 3.7/4.0**
Master of Science in Computer Science **August 2023 - May 2025**

- Coursework: Explainable AI, Computer Vision, Object Oriented Programming, Advanced Databases, Data Mining

SKILLS

Languages & Frameworks: Python, R, C++, Java, SQL, Django, Flask, OpenCV, PyTorch, TensorFlow
Machine learning/Deep Learning: Natural Language Processing, Computer Vision, Transformers, Scikit-learn
MLOps: Docker, Git, Bash, Shell Scripting
Visualization: Matplotlib, Seaborn, Plotly
Data Processing & Databases: Pandas, NumPy, SciPy, MongoDB, MySQL, PostgreSQL
Applied Skills: AWS, Data Structure & Algorithms, Linux, Unix

EXPERIENCE

Indiana University Indianapolis **Indianapolis, IN**
Research Assistant, Guide: Prof. Qingxue Zhang **November 2024 - May 2025**

- Contributed to a NSF-funded research project applied advanced deep learning to analyze respiratory audio signals of multiple patients for sleep disorder detection.
- Designed Transformer model with a novel activation function achieving higher accuracy over baseline.
- Evaluated multiple model configurations through controlled experimentation, resulting in accuracy improvement and error reduction by optimizing model architectures, hyperparameters, and novel activation function.

Indiana University Indianapolis **Indianapolis, IN**
Mathematics Tutor **January 2024 - January 2025**

- Mathematics Tutor at the Mathematics Assistance Center(MAC), Indiana University Indianapolis. Dedicated to supporting graduate and undergraduate students by providing clear explanations and guidance in mathematical concepts such as calculus, linear algebra, statistics, and probability.

Verzeo
Machine Learning Intern **June 2021 - September 2021**

- Led a 5-member team in developing a diabetes prediction system for women, delivering 95% accuracy through ensemble modeling of Random Forest, SVM, and Naive Bayes algorithms while reducing false negatives by 25%.
- Implemented robust cross-validation techniques and feature selection methods that reduced overfitting by 30%, while fine-tuning hyperparameters using GridSearchCV to boost model accuracy from 87% to 95%.

PROJECTS

AI-Powered Document Classification System

- Architected an enterprise-grade document classification system leveraging Vision Transformers (ViT) and PyTorch, achieving 93% accuracy on 400K+ documents with MLflow-based experiment tracking and automated model versioning.
- Implemented production-ready MLOps pipeline with automated data preprocessing, model checkpointing, and performance monitoring, processing 20K documents/epoch and achieving 95% training accuracy.

Image Captioning System using Deep Learning and Computer Vision

- Developed and implemented an advanced Image Captioning system using TensorFlow and InceptionResNetV2, incorporating attention mechanisms and beam search to generate contextually accurate descriptions with a BLEU-4 score of 0.178.
- Designed and trained a neural network architecture combining CNN and RNN components, producing 58.65% word-level prediction accuracy while implementing comprehensive evaluation metrics using NLTK.
- Created an efficient inference pipeline with beam search algorithm, streamlining caption generation process while maintaining code modularity and error handling for production-ready implementation.

Pubg Player Analysis and Rank Prediction

- Applied advanced data cleaning techniques and optimized dataset memory by 65.5% while maintaining data integrity and eliminating fraudulent gameplay data.
- Engineered 15+ game-specific features including normalized kill ratios, movement patterns, and team dynamics to capture comprehensive player performance metrics.
- Implemented Random Forest Regressor with feature importance analysis, achieving 0.0488 MAE for player ranking prediction while identifying key performance indicators.

ACHIEVEMENTS

- Attained a global rank 1770 in TCS CodeVita season 10.
- Secured a rank 4696 in Google Kickstart Round G 2022.
- Outstanding Intern Award - Verzeo.