Hemanth Rayudu

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EDUCATION

Northeastern University **Boston, MA, USA**
Master of Science in Information Systems *GPA: 3.7* Sep 2024 - Dec 2026
Coursework: Data Science Engineering Methods and Tools, Special Topics in Natural Language Engineering Methods and Tools, Application Engineering Development, Concepts of Object Oriented Design

TECHNICAL SKILLS

Programming Languages	Python, R, SQL, Bash, TypeScript, HTML-CSS
Machine Learning/ Analytics	ETL Processes, Data Cleaning and Analysis, Statistical Modeling, LLM, Fine-tuning, Tokenization
Tools and Frameworks	Power BI, Jenkins, Docker, VSCode, JIRA, Git,FastAPI, Postman, Angular, Django, Redis, AWS
Databases	MySQL, PostgreSQL, MongoDB, SQL Server, supabase
Python Libraries/Tools	TensorFlow, Scikit-Learn, PyTorch, NumPy, Pandas, Keras, SciPy, matplotlib, Seaborn
Certifications	Microsoft Azure Developer Associate

WORK EXPERIENCE

Tech Mahindra **Hyderabad, India**
Machine Learning Engineer May 2024 – Aug 2024

- Contributed advanced **ML modeling** to elevate user experiences by 25%, refining predictive algorithms for maximum accuracy and aligning solutions with evolving customer needs across diverse markets for big growth.
- Developed scalable ML frameworks in cybersecurity that cut downtime by 10%, fortifying **data pipelines** for robust **threat detection** and automating processes to sustain reliable high performance ecosystems at scale
- Designed and implemented robust machine learning frameworks to proactively identify potential threats, reducing system downtime by 10%. Leveraged best practices in model deployment to maintain high performance and adaptability in a rapidly changing security landscape.

Freelancer **Hyderabad, India**
Software Engineer Aug 2023 – April 2024

- Delivered **AI-driven** web solutions with chatbots and personalized recommendations, raising conversions by 20% and cutting query resolution by 30%, substantially fueling client satisfaction across diverse markets..
- Built compassdevelopers.in to amplify user engagement by 35% and elevate mobile responsiveness by 25% in new markets, unifying aesthetics, look and feel, and performance for a streamlined, intuitive experience.
- Secured 5-star ratings for AI-driven insights and actionable feedback across Canva, AWS, NetApp, and Google Maps, fueling enhanced user experiences and bolstering credibility in diverse tech ecosystems.

Tata Consultancy Services **Kochi, India**
Machine Learning Engineer March 2021 – June 2023

- Enhanced ML models for **classification, detection, segmentation**, and NLP using **TensorFlow, Keras, and PyTorch,** notably raised efficiency by over 20%, accelerating real-world data insights for improved operational outcomes.
- Applied hyperparameter tuning, transfer learning, and **GPU-accelerated training** on AWS, reducing training time by 15% and further boosting model accuracy by 10% for truly robust performance across diverse data domains.
- Deployed scalable ML across **AWS, Azure, and Docker** at 99.9% uptime, lowering infrastructure costs by 10% while ensuring resilient, high-performance architecture for seamless AI-driven operations worldwide.
- Led full-stack development in **Python, Django, and Angular,** achieving a 20% performance uplift and slashing errors by 30%, integrating AI insights to refine end-user experiences for optimal functionality.
- Delivered ML pipelines 15% faster by using **Agile workflows** and tuning **PostgreSQL** queries 25% quicker, fostering real-time data interactions and accelerating iterative improvements in dynamic production settings.

PROJECTS

Spotify Podcast Recommendation System

- Built an AI-driven system that personalizes podcast recommendations using LLMs by analyzing user listening habits.
- Integrated real-time feedback loops, improving recommendation accuracy by 35% based on user ratings and preferences.

Fine-tuned LLM SQL Generation Analyzer

- Designed a benchmarking platform comparing ChatGPT 3.5 Turbo and 4o Mini models (base and fine-tuned versions), personally fine-tuning both models with Hugging Face text-to-SQL datasets to enhance SQL generation accuracy.
- Created an evaluation framework with visual metrics to assess SQL generation performance across models, providing actionable insights for selecting optimal language models for text-to-SQL applications.

Face Detection with Deep Learning

- Implemented a face detection system using deep learning techniques with OpenCV and pre-trained models, extracting face embeddings to create a 128-dimensional representation that enables accurate face identification across images and video sources.