Vikas Reddy

Software Engineer with full-stack, ML/DL, and data science expertise, specializing in designing, integrating, and maintaining applications in multi-vendor environments.

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Experience

Epam Systems — Hyderabad, India
Intern, Software Development Engineer in Test — *Jan. 2023 – June 2023*

- Developed an automated testing framework using SOLID principles and design patterns that integrated components from internal and external teams, reducing deployment failures by 30%.
- Designed and maintained systems software applications in a multi-vendor environment using Python/Java, leveraging Kubernetes and working closely with systems analysts and project managers.
- Set up CI/CD pipelines with Jenkins,Git and Docker, cutting build times by 35% and automating deployments.
- Leveraged AWS services (Lambda, S3, Athena) with hadoop to build scalable, fault-tolerant data processing systems that handled 50GB+ of test data, demonstrating experience with cloud-based distributed computing.

Brain-Machine Interface Lab at UMBC — Baltimore, USA
ML Researcher, Deep Learning and Signal Processing — *Jan. 2024 – Present*

- Designed maintained a scalable ML system integrating transformers and ConvLSTM for EEG and facial processing, achieving 97% accuracy and supporting workflows; published at **IEEE BSN Conference**
- Collaborated with Brainwave Science to develop an end-to-end ML pipeline for lie detection (P300), utilizing Kafka for real-time EEG data streaming and CNN models to optimize signal processing, achieving 81% accuracy.
- Designed, built, and documented a data collection protocol for lie detection, gathering EEG data from participants to create a dataset while employing signal processing to address imbalanced datasets.

IndicWiki Project — Hyderabad, India
Intern, Data Analyst — *Mar. 2022 – June. 2022*

- Built a scalable data pipeline to scrape, preprocess, and clean datasets of over 10,000+ articles, enabling the translation of English Wikipedia content into Telugu and Hindi, increasing accessibility for 50M+ native speakers.
- Streamlined data processing workflows using Python and SQL, reducing preprocessing time by 30% and ensuring 98% data accuracy for multilingual datasets.
- Created detailed documentation for data pipeline processes, reducing onboarding time by 40%.

Projects

Linkedin Referral Automation Using Selenium | *Python, Selenium* — GitHub

- Developed an automated LinkedIn referral tool using Python, streamlining the process of requesting referrals and sending personalized messages to connections, enhancing networking efficiency.
- Designed and implemented a scalable automation script to interact with LinkedIn APIs, reducing manual effort by 80% and ensuring consistent follow-up messaging for referral outreach.

Lexically Constrained Beam Search for Machine Translation | *Python, PyTorch, Hugging Face* — GitHub

- Fine-tuned large language model (LLMs) for machine translation, Implemented lexically constrained beam search from scratch for translation, incorporating techniques to enforce pre-defined lexical constraints in output sequences
- Evaluated the machine translation model's performance on TR-EN tasks using WMT data, achieving notable quality improvements validated by over 300 successful test cases and BLEU score analysis.

Technical Skills

Languages: Python, Java, SQL, R, C/C++, HTML, CSS, TypeScript, JavaScript, JSON, XML
Frameworks: TensorFlow, PyTorch, Keras, Flask, PySpark, FastAPI, Hugging Face Transformers, LangChain, CrewAI
Developer Tools: Docker, Kubernetes, Jenkins, Git, AWS, VS Code, JIRA, Tableau, Power BI
Libraries: NumPy, Pandas, Matplotlib, Seaborn, Scikit-learn, OpenCV, Transformers, LangChain, Selenium, TestNG
Others: Data Strcutrues, Agile(Scrum/ Kanban), SOLID, Design Patterns, Debugging

Education

University of Maryland Baltimore County (UMBC) — Baltimore, MD
Master's in Data Science; GPA: 4.0 — *Aug. 2023 – May 2025*

Institute of Aeronautical Engineering (IARE) — Hyderabad, India
Bachelor's of Technology in Computer Science and Engineering; GPA: 3.41 — *May 2019 – May 2023*