Vikas Reddy

Full-Stack Software Engineer (ML/DL/Data Science) | 2+ Years Experience

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EXPERIENCE

Brain-Machine Interface Lab at UMBC   Baltimore, USA
ML Researcher, Deep Learning and Signal Processing   *Jan. 2024 – Present*
- Designed a scalable multi-modal ML system integrating transformers and ConvLSTM for EEG and facial feature processing, achieving 97% accuracy and enabling efficient end-to-end workflows; published at **BSN Conference**
- Built EmoFormer, a SegFormer-based architecture for facial emotion recognition, using Scikit-learn for preprocessing, achieving 77.34% (FER2013) and 67.71% (AffectNet) accuracies and setting benchmarks.
- Collaborated with Brainwave Science to build an end-to-end ML pipeline for lie detection (P300), utilizing Kafka for real-time EEG data streaming and CNN models to enhance signal processing, achieving 81% real-time accuracy.
- Designed and implemented a data collection protocol for lie detection, gathering EEG data from 25 participants to create a benchmark dataset, and employed advanced signal processing to augment imbalanced EEG datasets.

Epam Systems   Hyderabad, India
Intern, Software Development Engineer in Test   *Jan. 2023 – June 2023*
- Applied SOLID principles and design patterns to develop scalable and maintainable automated test scripts, reducing deployment failures by 30% and demonstrating strong object-oriented design fundamentals.
- Developed backend services and automation tools using Python/Java, leveraging Kubernetes for orchestration, collaborating with cross-functional teams in Agile to deliver scalable, high-quality features on two-week iterations.
- 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.

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%.
- Performed in-depth data analysis using statistical methods and visualization tools (e.g., Tableau, Matplotlib) to identify translation trends and improve content quality by 20%.

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*