Deepak Bolleddu

AI Engineer

+61-430040756
deepakbolleddu08@gmail.com
Portfolio Website
LinkedIn Profile

Education

•Masters of Computer Science and Engineering(ML, Bigdata & Cyber Security) *2024-25*
University of Wollongong, Australia WAM: 82.2

•Bachelor of Technology in Computer Science and Engineering *2017-21*
JNTUH, Hyderabad CGPA: 7.47

Experience

•AI Code Trainer *May - AUG 2024*
Scale AI freelance

- Training AI Systems and Large Language Models (LLMs)
- Solving the coding problems by writing functional and efficient code in any the languages - Python, Java, JavaScript, SQL, C/C++ and/or HTML/CSS, to improve the quality of the responses.
- Optimizing code to run at maximum efficiency.
- Writing robust test cases to confirm code works efficiently and effectively.
- Producing generative prompts as an input for the AI model. Evaluating the quality of AI-generated code response including human-readable summaries and output predictions.

•Senior systems Engineer *Aug 2023 - Feb 2024*
Infosys Limited Hyderabad

- Followed Agile methodologies (Scrum, Kanban) alongside development practices (TDD, BDD) throughout requirements gathering, analysis, design, development, and testing phases.
- Developed AI model to generate unit test cases from user stories presented in Jira Scrum board.
- Engineered this Automation with Transformers, OpenAI Pre-trained model, RestAPI and Python.
- Our model is able to Generate new test cases with 60 percent coverage with 40 percent of developer intervention.
- With experience mentored and lead team of 4 members to achieve this task.

•System Engineer *SEP 2021 - Aug 2023*
Infosys Limited Hyderabad

- Software Developer in a major U.S.-based banking application, primarily focused on implementing enhancements and optimizations to improve application performance.
- Contributed to the technology-driven improvements of the application, mentoring new team members, while also gaining expertise in the banking domain and maintaining the existing codebase.
- Developed and maintained code according to the baseline technical design, executing unit and integration tests. Provided timely support and fixes for critical defects.
- Designed and implemented RESTful web services using Java (Jersey and Spring Boot), and validated existing services. Performed API testing and validation with tools like Postman and SoapUI.
- Authored and maintained documentation for over 10 APIs, ensuring alignment with industry standards and best practices.
- Performed API and Unit testing of application by developing and applying test cases.

Research Projects

•AI-Powered Chest X-ray Abnormality Detection Using YOLOv5
Developed an AI-based system for automated detection of thoracic abnormalities in chest X-rays. View Project

- Trained a YOLOv5 model on 18,000 DICOM images from the VinBigData dataset, achieving 80
- Implemented bounding box localization for detecting 14 critical findings, including Cardiomegaly, Pneumothorax, and Pleural Effusion.
- Optimized model performance using transfer learning, hyperparameter tuning, and precision-recall analysis.
- Developed a web-based interface for real-time image upload and abnormality detection.
- Technology Used: Python, YOLOv5, OpenCV, Flask, Google Colab, NumPy, Pandas.

Publications

•**Optimized Uncertainty Quantification for Improved Chest X-ray Abnormality Detection** *Forthcoming 2025*

Accepted for publication in 10th International Conference on Computer Vision & Image Processing (CVIP 2025) View Details

- Co-authored research paper addressing limitations in deep learning models for chest X-ray analysis through comprehensive uncertainty quantification framework.
- Developed novel approach combining Monte Carlo dropout, temperature scaling, and class-specific threshold optimization for rare abnormality detection.
- Achieved significant improvement in F1-score for critical findings like Nodule/Mass detection (0.0 to 0.3989) while maintaining high overall AUC (0.9416).
- Demonstrated 80.6% reduction in Expected Calibration Error for nodules/masses, enhancing model reliability for clinical deployment.
- Validated framework on dataset of 15,021 chest X-rays with 15 different abnormality classes, providing robust uncertainty metrics for healthcare applications.

Technical Skills and Interests

Programming Languages: Python, SQL, Java, C/C++, JavaScript, HTML/CSS
Libraries & Tools: NumPy, Pandas, OpenCV, TensorFlow, PyTorch, Scikit-learn, Matplotlib, Seaborn
AI/ML Frameworks: YOLOv5, TensorFlow, PyTorch, Hugging Face Transformers
Big Data Technologies: Apache Spark, Hadoop, Snowflake, Azure Synapse
Cloud & DevOps: AWS, Azure, Docker, Kubernetes, Jenkins, CI/CD Pipelines
Databases: MySQL, PostgreSQL, MongoDB, Firebase
Cybersecurity: Network Security, Cloud Security, Encryption, Penetration Testing
Software Development Tools: Git, GitHub, Jira, Postman, VS Code, PyCharm
Relevant Coursework: Machine Learning, Deep Learning, Big Data Analytics, Cybersecurity, Data Structures & Algorithms, Operating Systems, Object-Oriented Programming, Database Management Systems, Software Engineering
Areas of Interest: AI/ML, Computer Vision, Big Data Analytics, Cloud Security, Large Language Models (LLMs), Web Development
Soft Skills: Problem Solving, Self-learning, Research, Team Collaboration, Presentation, Adaptability

Certifications

•**Microsoft Certified: Azure AI Engineer Associate** View Certification *Feb 2024*

•**Microsoft Certified: Azure Enterprise Data Analyst Associate** View Certification *Jan 2024*

Awards

•**ADM UNIT RISE AWARD** Infosys Limited, Hyderabad *Jul 2023*

Infosys- This is a great achievement and we congratulate you for this award that recognizes the hard work and dedication that you put in by going the extra mile and delivering your very best

•**Infosys Insta AWARD** Infosys Limited, Hyderabad *Sep 2022*

Infosys- Deepak is scaling up quick and well done on the Legal T-Doc project in vehicle RTB, delivering complex stories in short-time!