Aryasomayajula Ram Bharadwaj

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ABOUT

Versatile ML Engineer and Backend Developer with expertise in deep learning and strong DevOps knowledge. Skilled in multiple programming languages and refactoring legacy codebases, passionate about AI research.

EDUCATION

B.Tech Electronics and Communications   2015 - 2019
GMR Institute of Technology, Andhra Pradesh

PROFESSIONAL EXPERIENCE

Associate Technical Architect - MLOps   Nov 2024 - Present
Quantiphi Analytics, Bengaluru

- Designed and implemented an AI agent system for automated replies for a major telecom company.

Senior Developer at Innovation & Development Labs   June 2019 - Nov 2024
Musigma Business Solutions, Bengaluru

- Led development of multiple high-impact projects in LLM operationalization, automated trading, and MLOps.
- Specialized in backend development, DevOps, and ML engineering across various domains.
- Received multiple recognitions including Impact Awards and Star Performer of the Team.

KEY PROJECTS

LLM Agent Platform   Dec 2023 - Nov 2024
Team Lead, ML Engineer, Backend Developer

- Designed and implemented a semi-autonomous data analysis platform powered by LLM Agents.
- Developed training strategies for LLM Agents via automatic prompt optimization and integrated Retrieval-Augmented Generation (RAG) support.
- Implemented evaluation for LLM Agents' results using an ensemble of locally mosted LLMs.
- Maintained a customized fork of Microsoft's Autogen framework.
- Successfully deployed for two major clients, assisted client teams in creating use cases.

High Velocity Trading Platform   2021 - Dec 2023
Team Lead, Backend Developer, DevOps

- Refactored backend code and migrated deployment from bare-metal to Kubernetes.
- Implemented automated hyperparameter search for ARIMA models.
- Rewrote legacy trade-signal generation from R to Scala using Akka framework.
- Enabled near real-time metric calculation and portfolio visualization.

Next-Gen Model Operationalization Platform   2019 - 2021
Backend Developer

- Developed automatic retraining pipelines for image classification models.
- Designed and implemented Java microservices for creating and serving Jupyter notebooks.
- Engineered a microservice for deploying ML models in a DAG structure with canary and blue-green deployment strategies.
- Created dashboards for monitoring model and resource usage metrics.

RESEARCH PAPERS

Understanding Hidden Computations in Transformer Language Models   August 2024
Independent Researcher

- Conducted research to decode the "hidden" computations in transformer models during Chain of Thought (COT) reasoning.

- Investigated methods to enhance the faithfulness and internal mechanics of chain-of-thought reasoning in LLMs.

PERSONAL PROJECTS

AdvisorMatch   Nov 2024
Creator, Developer

- Built 'AdvisorMatch' a PhD advisor-matching tool, to help candidates find faculty advisors aligned with their research interests.

- Designed a similarity search mechanism that matches the user's research interests with the latest work of over 23,000 global faculty to recommend suitable matches.

SKILLS

Programming Languages: Scala, Python, Java, R
Machine Learning Frameworks: PyTorch, JAX
DevOps Tools: Kubernetes, Docker Swarm

AWARDS & RECOGNITIONS

AI Alignment Awards   July 2023
www.alignmentawards.com
Winning entry for the "goal misgeneralization" track research proposal, selected among 118 entries in this research competition.

Honorable Mention   Mar 2022
Alignment Research Center
"Eliciting Latent Knowledge" is an open research problem in AI Safety. My proposal was one of the honorable mentions in the ELK (Eliciting Latent Knowledge) research competition.

Impact Award   October 2022, December 2023
Musigma Business Solutions
Recognized for self-engagement, DevOps skills, and designing the LLM-Agent conversation platform.

Star Performer of the Team   2019 to 2023
Musigma Business Solutions
Received the SPOT award six times for exceptional contributions.

Bronze Position   Feb 2021
Build-on-Redis Hackathon
Winning entry in the Build-on-Redis hackathon. Implemented a text2code search tool entirely on Redis Stack using CodeBERT model's embeddings for a private code repository.