

Aryasomayajula Ram Bharadwaj

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ABOUT

Backend Developer fluent in multiple languages, with a knack for refactoring legacy codebases and strong DevOps knowledge. ML Engineer with strong foundations in deep learning and skilled in implementing various neural network architectures.

EDUCATION

B.Tech Electronics and Communications

2015 - 2019

GMR Institute of Technology, Andhra Pradesh

WORK EXPERIENCE

Senior Developer at Innovation & Development Labs

2019 - Present

Musigma Business Solutions, Bengaluru

- Designed and implemented the entire backend stack for a semi-autonomous LLM Agent platform for data-analysis.
- Implemented strategies for automatically optimizing LLM agent's prompts based on user conversation feedback.
- Implemented support for retrieval-augmented generation (RAG) for LLM agents.
- Maintained an internal fork of Microsoft's Autogen framework with customized changes to display timestamps for each agent interaction and the capability to retrieve SQL databases.
- Performed evaluation of various hyperparameter optimization algorithms for time series models.
- Designed and built an automated intra-day trading system, and also acted as a team lead.
- Migrated legacy code for trade-signal generation from R to Scala.
- Implemented automatic hyperparameter search strategies to tune parameters for time series models based on previous performance on live market data.
- Designed and implemented a framework for deployment strategies (blue-green, canary) for ML models deployed on Kubernetes.

ML Alignment Theory Research Trainee

May 2023 - July 2023

Stanford Existential Risk Initiative, Remote

- Underwent training for research in AI alignment and Agency foundations under guidance of John Wentworth.

SKILLS

<i>Languages</i>	Scala, Python, Java, R
<i>ML</i>	Pytorch, JAX
<i>DevOps</i>	Kubernetes, Docker-swarm
<i>Misc</i>	Akka, Spring-boot
<i>AI/ML</i>	LLM Fine-tuning, Adept in implementing most neural network architectures

PROJECTS

LLM Agent platform (Team Lead/ML Engineer/Backend Developer)

An LLM Agent orchestrator platform, for automating data science tasks. Deployed into production for internal use for two major clients.

High Velocity Trading Platform (Team Lead/Backend Developer/DevOps)

A web-based application for advanced financial market analysis, executing and visualizing algorithmic trading strategies in real-time.

Next-Gen Model Operationalization platform (Backend Developer)

An end-to-end web platform for operationalizing machine learning models. Provides a Jupyter notebook-like one-stop solution for deploying and monitoring ML models.

Opensource Contributions

- Implemented a framework for evaluating code generated by language models in a sandboxed environment, including the evaluation of language models' performance in math-word problems.
- Built a platform for generating debate transcripts given a set of topics using GPT-4. Benchmarked Mistral and Pythia models by LoRA fine-tuning them on these debate transcripts. ([link](#))

AWARDS

AI Alignment Awards *July 2023*

www.alignmentawards.com

My research proposal was one of the winning entries for the "goal misgeneralization" track.

Honorable Mention *Mar 2022*

Alignment Research Center

ELK (Eliciting Latent Knowledge) is an open theoretical research problem in AI safety/AI alignment. ARC hosted a competition for promising proposals.

Impact Award *October 2022, December 2023*

Musigma Business Solutions

Recognized for self-engagement with challenges, DevOps and integration skills, and designing the entire 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

Built a natural-language semantic code-search using codeBERT's embeddings for the Build-on-Redis hackathon organized by Redis-conf.