

# BADRI NARAYANAN MURALI KRISHNAN

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## EXPERIENCE

### Founding AI / ML Engineer

Sep 2025 – Present

*CuroNow*

*Madison, WI*

- Architected a **Medication Agent** to provide reliable medication insights using **LLM reasoning** & fallback handling.
- Built a **centralized AI caching microservice** that reduced duplicate LLM API costs by **40%** and latency by **25%**.

### AI / ML Engineer - Contract Role

Jun 2025 – Sep 2025

*BrainWaves Digital*

*Remote, USA*

- Led the development** of a **Finance Agent** from **scratch** to extract data & insights effectively.
- Deployed a **multi-model AI** stack comprising Gemini 2.5 Pro/Flash, GPT-4 with intelligent fallback mechanisms.
- Created a dashboard with **ReactJS**, **Supabase SSO** & **Firebase** to visualize the cash flow, balances, & transactions.

### Graduate Research Assistant

Sep 2024 – May 2025

*University of Wisconsin – Madison*

*Madison, WI*

- Designed a scalable ingestion system for **80k+** medical documents, optimizing chunking, embedding, and retrieval.
- Developed an **Agentic RAG** pipeline tailored for radiology reports, enabling clinicians to gain diagnostic insights.
- Generated document embeddings and stored them in a **Vector DB**, serving **locally hosted LLMs** via **Ollama**.
- Established an evaluation framework using **NDCG@5**, achieving a score of **0.857** on **1K+** radiology reports.
- Engineered an **Orchestrator LLM** to route queries across three specialized nodes (**Retriever-only**, **RAG**, and **general-purpose LLM**) for adaptive, clinician-friendly handling.

### Autonomous System Research Intern

Jun 2024 – Aug 2024

*Nokia Bell Labs*

*Murray Hill, NJ*

- Constructed a **multi-agent system** leveraging **autonomous agents** for adaptive learning & collaborative reasoning.
- Coordinated agent workflows with an **Orchestrator LLM** and **Chain-of-thought** prompting for multi-step planning and optimization. Agents executed specialized tasks via **tool-calling interfaces**.
- Built the framework with **LangGraph** & **Streamlit** to visualize agent interactions and analyze emergent behaviors.

### Associate Engineer – AI/ML

Jul 2022 – Jul 2023

*Qualcomm*

*Hyderabad, India*

- Introduced evaluation frameworks and metrics for ML models to enhance efficiency and accuracy by **10.26%**.
- Benchmarked **quantized** and **pruned models** on **Snapdragon SoCs** to assess latency, throughput, and power consumption under production workloads on SNPE (SnapDragon Neural Processing Engine).

## TECHNICAL SKILLS

**GenAI Competencies:** GenAI, LLMs, RAG, Multi-Agent Systems, Prompt Engineering, Vector DB, ML

**Programming Languages:** Python, C, C++, TypeScript, ReactJS, PyTorch, Tensorflow

**Frameworks & Tools:** PyTorch, TensorFlow, LangChain, LangGraph, Spark, Git, Docker, Azure, AWS, GCP, CI/CD

**Libraries:** NumPy, pandas, matplotlib, scikit-learn, Streamlit, NLTK, spaCy, OpenCV

## SELECTED PROJECTS

### Relationship Extraction using Large Language Models [🔗 Repo](#)

- Extracting complex relationships between entities from unstructured text data, by fine-tuning **Llama3.2 LLM**.

### Optimizing Natural Language Understanding: Fine-tuning Mistral 7B [🔗 Repo](#)

- Fine-tuning **Mistral 7B LLM** on the Samantha dataset for conversational and contextual question answering.

## SELECTED PUBLICATIONS

**Palmbench: A comprehensive benchmark of compressed Large Language Models on mobile platforms**

*The Thirteenth International Conference on Learning Representations (ICLR), Singapore, 2025*

**Sign Language Translation using Multi Context Transformer.**

*20<sup>th</sup> Mexican International Conference on Artificial Intelligence (MICAI), Mexico City, 2021*

## EDUCATION

### University of Wisconsin-Madison

Sep 2023 – May 2025

*Master of Science - Computer Sciences; CGPA: 3.827 / 4.0*

*Madison, WI*

*Courses:* Intro to AI, Advanced NLP, Foundational Models, Big Data, Data Cleaning & Integration for Data Science.

### SSN College of Engineering (Affiliated to Anna University), Chennai, India

Sep 2018 – May 2022

*B.Tech in Information Technology; CGPA: 8.95 / 10.0*

*Chennai, India*