Ruthran RAGHAVAN

Chief AI Scientist

Profile Summary

Chief AI Scientist with 10+ years of experience designing, developing, and deploying enterprise-grade AI systems. Expert in LLM-powered applications, advanced Retrieval-Augmented Generation (RAG) pipelines, and complex multi-agent systems using LangChain, LangGraph, and OpenAI's ecosystem. Proven ability in high-impact AI automation, combining LangGraph agents with Playwright and Playwright MCP for robust web automation. Recognized for building industry-scale AI agents for automation, predictive analytics, and intelligent decision-making that deliver measurable ROI.

Specializes in integrating open-source models (DeepSeek, LLaMA, Mistral) and enterprise AI tools (Gemini, GitHub Copilot) into scalable real-world applications. Adept at developing parallel, looping, and collaborative AI agents to solve high-complexity workflows. A leading corporate trainer, having delivered 10,000+ hours of AI and Generative AI training to over 5,000 learners worldwide, enabling organizations to achieve up to 10x productivity improvements through AI adoption.

Experience

Chief AI Scientist at HERE AND NOW AI
06/2018 – Ongoing

- Built custom **AI agents** for various automation tasks, significantly streamlining operations and reducing manual effort.
- Developed and maintained both **MCP (Model Context Protocol) servers and clients**, ensuring robust and scalable communication infrastructure.
- Architected and deployed **180+ AI agents** across sectors including finance, healthcare, education, and manufacturing, leveraging multi-agent orchestration with LangGraph.
- Designed and delivered hands-on training programs on building enterprise-ready LLM-powered applications using LangChain, LangGraph, and OpenAI libraries.
- Implemented large-scale RAG systems integrated with Elasticsearch and Haystack, boosting search and retrieval accuracy by over 40%.
- Developed AI automation frameworks that reduced operational costs by 50% in client organizations.
- Integrated GitHub Copilot to accelerate code generation, achieving 10x faster delivery and reducing defect rates by 35%.
- Led the **Probot** project—a multimodal AI professor capable of natural conversation, adaptive curriculum delivery, and speech synthesis for personalized learning.
- Built predictive maintenance AI agents that increased equipment uptime by 20% in industrial deployments.
- Created reinforcement learning-based optimization models for resource allocation, improving efficiency by 25%.
- Spearheaded the adoption of MLOps practices, reducing deployment time from weeks to hours through CI/CD pipelines.
- Authored white papers on ethical AI development and secured two provisional patents in multi-agent systems.
- Managed cross-functional teams of 15+ AI/ML engineers, data scientists, and DevOps specialists.

Data Scientist

HERE AND NOW – The Language Institute
07/2011 – 12/2023

- **Advanced Predictive Modeling & Deployment:** Architected, developed, and productionized diverse predictive systems using state-of-the-art ML/DL, including **logistic regression, decision trees, SVM, CNNs**, and **RNNs** for classification, interpretability, high-dimensional data, and temporal analysis.
- **Pioneering AI in Personalized Education:** Built and fine-tuned complex **neural network models** for edu-tech, including **learner performance prediction** and designing sophisticated engines for **personalized learning path recommendations**.
- **Developing AI-Powered Language Assessment:** Led NLP application to create novel **AI-powered language evaluation systems**, boosting assessment accuracy by **30%** over manual methods.
- **Real-Time Data Visualization & Performance Monitoring:** Developed comprehensive **analytics dashboards** using Python (**Pandas, Matplotlib**) to track critical real-time metrics (e.g., **learner engagement, outcomes**), providing actionable stakeholder insights.
- **Operational Efficiency through AI Integration:** Championed **AI-driven automation** into core workflows, resulting in a measurable **40% reduction in manual processing time** and significant cost savings.
- **Strategic Data Mining for Learning Optimization:** Employed rigorous **data mining techniques** on large datasets to identify **learning patterns**. This intelligence optimized course structure, leading to a verifiable **25% increase in course completion rates**.

Education

M.Sc. Psychology – *Madras University, India* (08/2010 – 04/2012)

- Conducted advanced research using T-tests, linear regression, logistic regression, and support vector machines.
- Built and evaluated predictive models to forecast cognitive performance from large behavioral datasets.
- Applied multivariate analysis, regression modeling, and supervised ML techniques to simulate decision-making processes in AI.

B.Sc. Psychology – *Madras University, India* (08/2007 – 05/2010)

- Gained expertise in statistical methods and computational modeling through cognitive neuroscience research.
- Applied clustering algorithms, regression models, and hypothesis testing to study learning and memory systems.
- Linked cognitive process models to AI architectures for more human-like interaction designs.

Projects & Innovations

1. Trained **5,000+ AI researchers and data scientists** in enterprise AI development.
2. Created multi-agent LangGraph workflows for autonomous enterprise operations.
3. Developed RAG-based systems with 40%+ improved retrieval accuracy.
4. Built AI-powered evaluation systems with CNNs and RNNs for enhanced assessment.
5. Integrated GitHub Copilot to deliver 10x productivity gains for development teams.
6. Led the **Probot** AI Professor project for scalable, adaptive learning experiences.
7. Designed predictive maintenance AI agents for industrial clients.
8. Built reinforcement learning agents for resource optimization.

Technical Skills

Artificial Intelligence & Machine Learning

- Frameworks: PyTorch, TensorFlow, Keras, scikit-learn
- LLMs: GPT-5, LLaMA, Mistral, DeepSeek, Kimi Gemini 3 Pro, Claude Sonnet & Opus 4.5
- AI Development: LangChain, LangGraph, Hugging Face Transformers
- RL & Retrieval: OpenAI Gym, RLlib, Elasticsearch, Haystack
- Expert with MCP servers building and automation using AI Agents (Intelligent Automation Expert)

Data Science & Deployment

- Python, C++, Pandas, NumPy, Matplotlib
- Docker, Kubernetes, AWS Sagemaker

Software Development

- Frontend: ReactJS, Angular, Next.js
- Backend: Node.js, TypeScript, Python, Java
- AI Chatbots: LangChain, OpenAI, Google Generative AI
- AI Agents: LangGraph, Google ADK, Crew AI, Microsoft AutoGen.

Training & Impact

- Delivered **10,000+ hours** of AI training to **5,000+ learners** globally.
- Conducted **5,400+ hours** of Generative AI training for **2,700+ learners**, improving delivery speed by up to 50%.
- Partnered with Agilysys, Metriqe, Radial Omni Channel, OPG Power, Indian Army, Amazon, Renault, Société Générale, Saint-Gobain, and leading universities to implement AI-driven transformation strategies.