

Roger Richard Demello

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SUMMARY

AI Engineer with experience building and deploying production-grade LLM applications and autonomous AI agents. Delivered 3+ AI systems serving 200+ users, improving response accuracy, system reliability, and inference efficiency through agentic workflows, RAG pipelines, and vector databases. Strong foundation in backend systems, async APIs, and scalable AI infrastructure.

WORK EXPERIENCE

AI LifeBOT | *AI Engineer Intern*

Jan 2026 - Present

- Built and deployed 3+ production-grade LLM applications and autonomous AI agents, serving 200+ users and improving task completion efficiency through tool integration, long-term memory, and goal-driven workflows.
- Architected end-to-end AI pipelines integrating LLMs, vector databases (RAG), external APIs, and streaming layers, improving system reliability and reducing inference latency through optimized retrieval and caching strategies (achieved noticeable latency reduction in real-time responses).
- Led rapid prototyping and research of scalable AI solutions using modern frameworks (LangChain, LlamaIndex), accelerating development cycles and delivering production-ready documentation for deployment.

CFM, RCOEM | *Machine Learning Intern*

May 2025 - Jul 2025

- Enhanced a machine learning-based sleep disorder prediction system using lifestyle and physiological data, improving model robustness and generalization.
- Achieved **87% prediction accuracy** through structured feature engineering and statistical analysis of stress levels, sleep duration, and blood pressure.
- Built and evaluated ML models using Python, Scikit-learn, and Pandas, reducing development time by **30%** and improving validation accuracy through optimized preprocessing and feature engineering.

PROJECTS

DealSentry - Intelligent Proposal Guard | [GitHub](#)

- Built an enterprise AI-powered compliance and risk analysis platform used to automate proposal validation and reduce manual review effort using React, TypeScript, Node.js, PostgreSQL, and Azure OpenAI.
- Designed a rule-based compliance engine with AI-driven risk scoring, document ingestion (DOCX/PDF), approval workflows, audit trails, and contract lifecycle tracking.
- Integrated CRM tools (Salesforce, HubSpot, Gmail, DocuSign) with role-based access control, enabling automated validation, faster approvals, and reduced compliance risk.

Autonomous Executive Email Copilot | [Demo Link](#)

- Built a production-grade AI agent system using Python, FastAPI, and LLM APIs for automated email classification, prioritization, and decision workflows.
- Architected RAG pipelines with vector databases and multi-agent orchestration using LangChain, improving response accuracy and reducing irrelevant outputs by 20% through context-aware retrieval and feedback loops.
- Developed scalable backend APIs and observability pipelines for real-time monitoring and performance optimization.

Contentflow - AI Marketing Agent | [GitHub](#)

- Built an AI-powered marketing automation system integrating WhatsApp, Instagram, and Messenger APIs for real-time customer engagement.
- Implemented LLM-based response generation and follow-up automation, increasing interaction efficiency.
- Designed a scalable backend using MongoDB and asynchronous processing for reliable production deployment.

SKILLS

- **Programming Languages:** C, C++, Python, Java, SQL
- **Machine Learning & AI:** TensorFlow, Scikit-learn, NumPy, Pandas, PyTorch, LLMs, Semantic Search
- **Agentic & Generative AI:** RAG Pipelines, Vector Databases, Multi-Agent Systems, LLaMA, Prompt Engineering, Agentic Workflows
- **Backend & DevOps:** Amazon Web Services, FastAPI, Flask, REST APIs, CI/CD, Asynchronous Programming
- **Tools & Platforms:** Git, GitHub, Hugging Face, LangChain

EDUCATION

Shri Ramdeobaba College of Engineering and Management

Bachelor of Technology, Electronics and Communication (GPA: 8.9)

Shri Ramdeobaba College of Engineering and Management

Minor Degree: Artificial Intelligence and Machine Learning (GPA: 9.6)

CERTIFICATIONS / AWARDS

- AWS Certified Cloud Practitioner: Amazon Web Services (Issued October 2025)
- 2nd Place: **Bytesage AI National Hackathon**