Guruprasad Nayak

AI Systems Engineer | Agent Architect | Applied ML

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AI Systems Engineer with a strong foundation in agentic architectures, retrieval systems, and production-grade AI infrastructure. Proven experience designing deterministic, token-aware context selection systems, building evaluation and observability into AI pipelines, and operating under strict reliability and security constraints. Background spans AI application engineering, cybersecurity operations, and large-scale automation. Adept at translating research concepts into deployable systems.

CORE TECHNICAL SKILLS

AI & Agent Systems

- Agentic AI, RAG, Context Selection, Memory Systems
- LLM Orchestration, Prompt Engineering, Tool Calling
- Evaluation Frameworks, Agent Metrics, Failure Modes

Machine Learning

- Model Fine-Tuning, Dataset Curation, Evaluation Design
- NLP, Embeddings, Similarity Search, Ranking Systems

Engineering & Infrastructure

- Python, FastAPI, Async Systems
- Docker, CI/CD, Token Budgeting
- REST APIs, System Architecture

Security & Analysis

- OSINT, Threat Analysis, Secure System Design
- Data Governance, Access Control Principles

CERTIFICATIONS

Certified Ethical Hacker (CEH) - EC-Council

AI: Implications for Business Strategy - MIT Sloan

Blockchain Technologies: Business Innovation and Application - MIT Sloan

Internet of Things: Business Implications - MIT Sloan

EXPERIENCE

AI Engineering Intern - AI Systems & Agent Infrastructure

AIRS Foundry | Dec 2025 – Present

- Designed and implemented a unified ContextScorer to replace fragmented heuristics for agent memory selection, enabling deterministic, token-budget-aware context assembly.
- Built a two-stage scoring pipeline combining absolute utility (relevance, recency, authority, priority, procedural fit) with marginal utility (redundancy penalties, gap-fill bonuses, contradiction handling).
- Integrated early-stopping logic to prevent unnecessary context inflation, improving reasoning stability under constrained inference budgets.
- Extended memory configuration with structured scoring configs, query archetype detection, tunable thresholds, and optional embedding-based redundancy detection.
- Implemented observability and metrics for context selection, tracking latency, token usage, facet coverage, and stop reasons.
- Developed pytest coverage for scoring behavior, config parsing, metrics recording, and recall workflows.
- Ongoing: Building a visual node-based editor for code and workflow generation using Unreal Engine, inspired by node-driven environments such as Windsurf.
- Supporting AI application development and open-source model fine-tuning workflows, including dataset preparation, evaluation design, and deployment readiness.

Sergeant

Singapore Armed Forces | Jul 2023 – Aug 2025

- Led a team of 30 personnel, managing operations, scheduling, and cross-unit coordination in mission-critical environments.
- Architected and delivered the unit's first digital operations platform, replacing paper-based workflows and reducing manpower requirements by ~80%.
- Built internal automation tools for personnel accounting and reporting, saving ~60 hours per month through process elimination.
- Awarded the 23SA Regimental Sergeant Major Coin and Safety Steward Award for operational excellence and risk management.

Cybersecurity Intern

Ernst & Young & Maharashtra Cyber Police

- Conducted OSINT investigations, vulnerability analysis, and anomaly detection in live cybersecurity environments.
- Supported intelligence workflows requiring structured reasoning, data correlation, and secure handling of sensitive information.

Teaching Assistant - Computer Science

University of Delaware

- Mentored and taught over 200 students across data structures and systems courses.
- Improved engagement and submission rates by ~40% through structured materials and targeted technical guidance.

EDUCATION

University of Delaware, USA - *Bachelors in Science, Computer Science*

AWARDS

SAF 23SA Regimental Sergeant Major Coin

SAF Safety Steward Award 2025

Dean's List - University of Delaware Fall 2019