Nathan Rice

📍 Durham, NC

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**PRINCIPAL AI ENGINEER**

*Machine Learning / Systems Architecture / Frameworks / Leadership*

Dedicated professional showcasing 17+ years of progressive achievements in software engineering, AI systems, and machine learning for high-profile organizations. Decisive leader who ensures the smooth execution of full-cycle technical initiatives, all while providing trusted mentoring surrounding modern systems and methodologies. Forges lasting stakeholder relationships to align development and evolve best practices. Leverages expertise in intelligent frameworks, decision support systems, and cutting-edge data tools to deliver AI-powered solutions that exceed all expectations.

**CAREER HIGHLIGHTS**

* **Created a real-time streaming proxy system** for the secure transport of military sensor data at Orbis Operations, leveraging advanced AI agents for operational intelligence.
* **Earned a reputation as a thought leader in AI** after building out Key Trustee at Sibylline Software, a well-received framework and service for rapidly building RAG-enabled AI web apps.
* **Headed a pacesetting team at Semantic Bits/ICF**, incorporating modern methodologies for efficiently maintaining a large, critical database for the US government.
* **Drove pacesetting annual savings for a major client** at MartianCraft by spearheading the development of internal cost-cutting tools, advanced visualization and alerting.

**SKILLS & EXPERTISE**

Machine Learning / Artificial Intelligence (AI) / System Architecture / Scalability / Framework Development

Modern Data Tools / Scoping / Design / Engineering & Product Strategy / Decision Support Systems

LLMs / Prompt Engineering / Intelligent Agents / Cross-Functional Leadership / Technical Mentoring

**PROFESSIONAL EXPERIENCE**

**Orbis Operations** 2025

Senior Software Engineer

* Crafted a real-time streaming proxy system for the secure transport of military sensor data, with the solution recognized and adopted as a template for similar solutions.
* Implemented infrastructure management using Terraform, automated CI/CD using GitHub Actions, and became the primary escalation point for difficult and time-sensitive challenges.
* Designed robust, reliable, and scalable architectures for military grade application security, offering subject matter expertise while driving the advanced use of AI agents for operational intelligence.

**Sibylline Software** 2024 – 2025

Principal AI Engineer

* Gained a reputation as a thought leader in AI after building out Key Trustee, a well-received framework and service for rapidly building RAG-enabled AI web apps.
* Produced Jung, an API to perform psychometric analysis from unstructured text, increasing knowledge at every opportunity with LLMs, ML architectures, and related platforms.

**Semantic Bits/ICF** 2021 – 2023

Tech Lead

* Led the development of a React client and Node services to handle Medicare & Medicaid patient assessments, ensuring team coordination and providing trusted technical mentoring.
* Cited for critical contributions to the operation and maintenance of the production Medicare/Medicaid databases, decreasing average response times after reviewing query processing.

**MartianCraft** 2017 – 2020

Senior Software Engineer

* Saved the client a large portion of their total budget per year by spearheading the development of internal cost-cutting tools, receiving commendations for innovation and problem-solving skills.
  + Created a React web application to monitor oil pipelines and processing facilities in real time, cutting software licensing and cleanup costs despite operational challenges.
  + Constructed a React native kiosk application with an SMS verification service that cut work order processing by ~78% while also reducing fraud in a short timeframe.

**University of North Carolina** 2010 – 2017

Research Software Engineer

* Offered valued aid to researchers to overcome technical hurdles and turn data into insights and compelling applications, receiving the best possible performance reviews annually.
  + Delivered CLINE and CPORT (web apps for air quality impact assessments and regulatory changes for the EPA), delivering the solutions ahead of schedule and under budget.
  + Established The William Blake Archive, an Angular web application that acted as a technical foundation for databases/document management for multiple universities.
  + Noted for vital input to the management and analysis of big data using Spark/Hadoop, authoring a relevant handbook to share best practices and lessons learned.

**Additional Experience**

Endless Rise, Managing Director, 2009 – 2010

Research Software Engineer, Acelot, 2008 – 2009

**EDUCATION & TRAINING**

**UCLA:** Bachelor of Science, Biochemistry (Bioinformatics Concentration)

**TECHNICAL SKILLS**

**Web Development**: HTML, CSS, Tailwind, JavaScript, TypeScript, React, Remix, Next.js, Tailwind, Redux, MobX, Jest

**Backend & API Development**: Python, FastAPI, Flask, Django, Node.js, Bun, Express, Hono, SQLAlchemy, UV, Poetry, Pydantic, OpenAPI, GraphQL, RESTful APIs

**Data & Databases**: PostgreSQL, MySQL/MariaDB, Redis, MongoDB, CouchDB, Parquet, DuckDB, Elasticsearch, Solr, Pandas, NumPy, SciPy, Plotly, Matplotlib, PostGIS, ETL

**Mobile Development**: React Native, Expo, React Navigation, Firebase, Supabase

**Machine Learning & AI**: PyTorch, Jupyter, Scikit-learn, Retrieval-Augmented Generation (RAG), Spark, Hadoop

**Cloud & DevOps**: AWS (S3, RDS, EC2, Lambda, SQS, IAM), GCP (Cloud SQL, Cloud Run), Docker, Kubernetes, Terraform, Serverless Framework

**Event-Driven & Distributed Systems**: RabbitMQ, Kafka, NATS, WebSockets, Event-Driven Architecture

**CI/CD & Version Control:** Git, GitHub, Subversion, Jenkins, GitHub Actions

**System Administration & Automation**: Linux, Bash, PowerShell, Ansible, Terraform, Kubernetes