

# Keith Hanson

## AWS, AI, and LLM Expertise for Customer Experience

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### Professional Summary

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Principal Product Engineer with 20+ years in full stack development and technical leadership. Since 2023, specializing in agentic AI development and LLM/SLM deployment. Expert in AWS cloud architectures, voice AI systems, and production-ready AI agent frameworks. Proficient in Python, Node.js, AWS services (Connect, Lambda, Kinesis), and modern AI frameworks (LangChain, DSPy, Pi, AWS AgentCore). Demonstrated organizational leadership in multiple roles, cultivating a large network of software engineers and technical talent.

### Core Competencies

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- AWS Cloud Architecture
- Large Language Models (LLMs)
- Small Language Models (SLMs)
- Voice AI & Real-time Audio Processing
- Agentic AI Development
- Agentic Development Frameworks
- Local LLM Development & Deployment
- Python & Node.js Development
- CI/CD Expertise
- AWS Services (Connect, Lambda, Kinesis)
- API Development & Integration
- Cloud Infrastructure (AWS, Docker)

### Professional Experience

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#### Pronetx

*Principal Product Engineer*

March 2025 - Present

United States (Federal Contracting Agency)

Lead GenAI Practice for AWS implementations serving federal clients (SSA, DOE, healthcare) and major brands (NYT, Petco).

- Architect AI agent evaluation systems with AWS Lambda, Connect, and Bedrock for automated transcript analysis and performance optimization
- Build prompt engineering frameworks using DSPy and custom Python/JavaScript for modular AI evaluation workflows
- Develop real-time voice AI frameworks for conversational AI applications
- Create in-house developer tools for testing generative AI flows at scale using AI-driven testing
- Engineer knowledge base integrations with custom crawlers and APIs for AI agent workflows
- Implement IaC practices (CDK, CloudFormation) with VPC-based architecture and least-privilege permissions
- Drive system refactors improving maintainability and performance while optimizing Lambda execution
- Recruit, interview, and mentor junior engineers on AI/ML best practices and AWS infrastructure

- Deliver full SDLC for household brands, bridging technical and business requirements

## **Vanguard Vision Technologies, LLC**

*Freelance Code Wizard / AI Solutions Architect*

July 2023 - March 2025 (1 year 9 months)

United States

- Built custom AI automation solutions using LLMs and natural language processing
- Modernized 15-year-old Abatix.com with React front-end and custom e-commerce modules integrated with legacy systems
- Recruited, hired, and mentored junior developers in modern full stack development
- Architected custom data processing pipelines using Python frameworks tailored to complex business requirements
- Implemented ComfyUI workflows for AI image generation pipelines
- Deployed private LLM solutions for organizations requiring data privacy

## **City of Shreveport**

*Chief Technology Officer*

January 2019 - December 2022 (4 years)

Shreveport, Louisiana

- Grew IT department from 20 to 60+ employees, creating data science, GIS, and Smart City divisions
- Built Shreveport's first Real-Time Crime Center at fraction of typical costs using innovative partnerships
- Developed open-source public safety cameras and IoT solutions for citywide deployment
- Created Digital Divide mapping solution using IoT on garbage trucks, securing \$500K in funding
- Migrated 1,200+ endpoints to O365 with city-wide 2FA
- Implemented cloud backup and anomaly-based threat protection against ransomware
- Managed media relations, public speaking, and technology education initiatives
- Transformed IT culture, reducing HR complaints to near zero through improved transparency

## **Twin Engine Labs**

*CEO*

August 2010 - January 2019 (8 years 6 months)

Shreveport, Louisiana

- Scaled mobile app company from 2 to 16 employees, producing award-winning applications
- Developed "The Fantastic Flying Books of Mr. Morris Lessmore" (based on Oscar-winning short film)
- Partnered with major brands: Cisco Networks, American Songwriter Magazine, Symantec
- Won 2012 Gold Winner for Mobile Applications - Entertainment and multiple industry awards
- Led ideation, monetization, technical execution, and team growth

## **RubyEngineer.com**

*Owner / Contract Ruby Developer*

March 2009 - August 2010 (1 year 6 months)

Shreveport, Louisiana

- Built services using Ruby and NoSQL backends (Redis, CouchDB, MongoDB)
- Implemented AI programming: Naive Bayes Classifiers and Sentiment Analysis
- Delivered rapid prototypes enabling quick entrepreneurial decisions

## Earlier Career Highlights

**Wieck Media** - Development Manager (2009-2010) & Lead Software Developer (2007-2008)

- Managed engineering teams and deployment strategies
- Led Ruby on Rails development with PostgreSQL/MySQL

**Highform, Inc** - Lead Ruby Developer (2009)

- Implemented EC2 auto-scaling, reducing costs 60% during low traffic
- Built automated parsers handling 10,000+ items with millisecond response times

## Additional Leadership & Community Involvement

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**Decentralized Wireless Alliance** - Committee Member (2022-2023)

- Reviewed grant applications for Helium network non-profit foundation

**Shreveport Charter Foundation** - Trustee (2012-2015)

- Founding board member for Magnolia School of Excellence Charter School
- Oversaw construction and curriculum for two K-12 facilities serving 600+ students

## Technical Expertise

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**AI & Machine Learning:** Large Language Models (GPT, Claude), Small Language Models (SLMs), Local LLM Development & Deployment, OpenAI API, Agentic AI Frameworks, NLP, Sentiment Analysis, Naive Bayes Classifiers

**LLM Frameworks:** Deep expertise in DSPy and AWS AgentCore

**Vector Databases & RAG:** Expertise in AWS Bedrock Knowledge Bases, Pinecone, PGVector, RAG tools and chunking strategies

**AWS Services:** Connect, Lambda, Kinesis, Chime SDK, S3, EC2, CloudFront, API Gateway

**Voice & Audio:** Real-time Audio Processing, Voice AI Systems, WebRTC

**Programming Languages:** Python, Node.js, JavaScript, Ruby, C#/.NET, SQL

**Frameworks & Tools:** React, Svelte, Docker, Sinatra, Rails, Bolt for Python, ComfyUI

**Databases:** PostgreSQL, MySQL, Redis, MongoDB, CouchDB, SQL Server

**IoT & Hardware:** ESP32, OpenFlexure Microscopes, Smart Home Automation, Custom IoT Solutions

## Recognition & Awards

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- Bloomberg Innovator of the Week
- 2012 Gold Winner - Mobile Applications (Entertainment Category)
- 1st Place Winner - WalkinApp.com

- Rising Star of the Year
- Growth Company of the Year

## Featured Publications & Media

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- "Hacking Garbage Trucks to Bring Broadband to Those in Need" - Technology innovation coverage  
<https://makezine.com/?p=554532>
- "Mapping Broadband Access with Garbage Trucks" - Connect This Podcast Ep. 20  
<https://communitynets.org/content/mapping-broadband-access-garbage-trucks-and-other-innovative-municipal-initiatives>
- "An Inside Look at Shreveport's RealTime Crime Center" - Government technology leadership  
<https://www.shreveporttimes.com/story/news/2021/09/17/shreveport-real-time-crime-center-inside-how-works/5596400001/>
- "Shreveport Puts Technology on Garbage Trucks to Find Digital Divide" - Smart city innovation  
[https://www.ktbs.com/news/shreveport-puts-technology-on-garbage-trucks-to-find-digital-divide/article\\_986474a2-1a26-11eb-9765-e335c74f514c.html](https://www.ktbs.com/news/shreveport-puts-technology-on-garbage-trucks-to-find-digital-divide/article_986474a2-1a26-11eb-9765-e335c74f514c.html)