

BRADLEY S. ISENBEEK

AI Systems Architect | Machine Learning Engineer | Frontier Technologist

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PROFESSIONAL SUMMARY

AI-focused Software Architect with 15+ years designing secure, large-scale data systems for government and enterprise clients. Extensive hands-on experience with frontier AI models, agentic programming frameworks, and AI-augmented development workflows. Proven track record leading technical teams on classified projects and building high-availability infrastructure processing billions of records. Expert in AI/ML pipelines, distributed systems, cloud infrastructure, and secure data management. Demonstrated AI fluency through daily co-development with Claude and frontier LLMs across architecture, code generation, data analysis, and investigative tooling. Active builder of open-source AI tools and agentic systems.

AI & MACHINE LEARNING EXPERTISE

Frontier AI Development & Agentic Systems

- Daily practitioner of AI-augmented software development using Claude (Anthropic), GPT-4, and open-source models as co-pilots for architecture design, code generation, debugging, and security analysis
- Creator of Sovereign — an assembly-like agentic programming language designed for self-improving AI systems (github.com/tinymachines/sovereign)
- Maintainer of Gene Pool — curated archive and analysis of AI coding agent system prompts for frontier model evaluation
- Active exploration of AI edge computing with ESP32 mesh networks, bridging hardware hacking with AI inference at the edge
- Extensive experience with vector databases (Pinecone), RAG pipelines, embedding models, and retrieval-augmented generation architectures

Machine Learning & Data Intelligence

- Built production ML models for entity resolution, relationship mapping, and data segmentation serving law enforcement and government investigative platforms
- Integrated and normalized 4.9 billion data points for ML model training, feature engineering, and relationship discovery across 10,000+ data sources
- Architected search algorithms using ML-driven ranking to connect disparate data sources, revealing hidden relationships between individuals, businesses, assets, and locations
- Experience with scikit-learn, Weka, statistical modeling, pattern recognition, recommendation engines, and bloom filters for probabilistic data structures

Technologies: Claude API, OpenAI API, Pinecone, LangChain, Streamlit, Hugging Face, scikit-learn, Weka, vector embeddings, RAG, agentic frameworks, prompt engineering

SECURITY CLEARANCE & GOVERNMENT EXPERIENCE

- Lead developer on classified project with the United States Government (TransUnion TruLookup, 2014–2018)
- Extensive experience in secure environments handling sensitive investigative and personal data for law enforcement and federal agencies
- Deep understanding of data protection protocols, federal compliance frameworks, FISMA, and security best practices

PROFESSIONAL EXPERIENCE

Founder & AI Systems Architect | [SysForge.ai](https://sysforge.ai)

2024 – Present

AI consulting and development firm delivering frontier AI solutions for enterprise clients.

- Architecting AI-powered systems integrating frontier language models into enterprise workflows for automation, analysis, and decision support
- Developing custom agentic AI pipelines using Claude, GPT-4, and open-source models for client-specific investigative and operational use cases
- Building AI-augmented development toolchains and internal platforms that accelerate secure software delivery
- Consulting on responsible AI deployment, prompt engineering strategy, and AI governance for regulated industries

Technologies: Python, Claude API, FastAPI, AWS, Docker, Pinecone, RAG architectures, agentic frameworks

Architect & Developer | [VictoryText, LLC](https://victorytext.com)

2022 – Present

Enterprise-grade, high-volume messaging platform with strict uptime and compliance requirements.

- Architected high-availability messaging platform handling millions of messages with 99.9% uptime, leveraging AI for anomaly detection and delivery optimization
- Developed RESTful API layer using FastAPI, integrating multiple carriers (Twilio, Bandwidth, Kaleyra, Telnyx) with automated failover
- Engineered DynamoDB operations for atomic queue management ensuring message delivery guarantees
- Built real-time analytics backend with AI-driven pattern recognition aggregating carrier statistics via AWS QuickSight

Technologies: Python, FastAPI, AWS (DynamoDB, Lambda, CloudWatch, QuickSight), RESTful APIs

Architect & Developer | [ConservativeConnector, LLC.](#)

2018 – 2022

Large-scale ESP data management systems processing billions of messages and 100M+ contact records.

- Designed high-volume data infrastructure leveraging AWS for scalability, with ML-driven data quality scoring and deduplication
- Integrated and normalized 4.9 billion data points for ML model training, relationship discovery, and predictive analytics
- Built multi-channel data ingestion pipelines with ETL processes shipping to Snowflake, incorporating automated anomaly detection
- Ensured GDPR and CAN-SPAM compliance across all data processing operations using automated policy enforcement

Technologies: Python, AWS (EC2, S3, RDS, Lambda), Snowflake, PostgreSQL, ML pipelines, ETL

Senior Architect | [TransUnion – TruLookup Division](#)

2014 – 2018

Investigative intelligence platform providing actionable insights on people, assets, and relationships from 10,000+ data sources. Served law enforcement, government agencies, and legal clients.

- Served as lead developer on classified project with the United States Government, demonstrating expertise in secure AI system architecture and federal compliance
- Architected distributed infrastructure processing billions of records and millions of queries daily with 99.9%+ uptime
- Built machine learning models for entity resolution, relationship mapping, and data segmentation with the Data Science team
- Implemented ML-driven search algorithms connecting disparate data sources to reveal hidden relationships between individuals, businesses, assets, and locations
- Led team of five developers in search algorithm optimization, performance tuning, and ML model integration

Technologies: C#, .NET, Apache Solr, Elasticsearch, SQL Server, ML frameworks, distributed caching

OPEN SOURCE & AI PROJECTS

[bradley.io](#) — AI Pilot Dashboard tracking AI-augmented development sessions and frontier model usage

Sovereign — Assembly-like agentic programming language for self-improving AI systems

Gene Pool — Curated archive and analysis of AI coding agent system prompts across frontier models

ARI — AWS resource inventory tool | **ESP32 AI Edge** — Edge computing + embedded inference | **Rust for Haters** — Systems deep-dives

TECHNICAL EXPERTISE

AI & ML: Claude/Anthropic API, OpenAI GPT-4, prompt engineering, agentic frameworks, RAG pipelines, vector databases (Pinecone), LangChain, Streamlit, entity resolution, relationship mapping, recommendation engines, statistical modeling, scikit-learn, Weka, AI-augmented development

Languages: Python (Expert), Bash (Expert), C#/.NET (Advanced), Rust, C/C++, Java, SQL (Expert), JavaScript/TypeScript

Cloud & Infrastructure: AWS (EC2, Lambda, DynamoDB, RDS, S3, CloudWatch, QuickSight), Linux administration, Docker, distributed systems, high-availability design, load balancing

Data & Search: Snowflake, PostgreSQL, MySQL, SQL Server, DynamoDB, Redis, Elasticsearch, Apache Solr, ETL pipelines, Hadoop, Hive, vector embeddings

Development: FastAPI, RESTful APIs, microservices, Git, CI/CD, message queues, real-time processing, Agile, DevSecOps

EDUCATION

Advanced OOP — Columbia University | **Computer Science** — Plymouth State College | **Physics Engineering** — University of Buffalo