

Ying (Andrew) Zhou

AI BUILD OPERATOR · PRINCIPAL DATA ENGINEER / ENTERPRISE ARCHITECT

Founder — Agile Strategy Inc (OPC) · Vienna, VA

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Thirty years building enterprise data systems at petabyte scale — now pointed at shipping real AI products end-to-end. I build agents that act on real data, backed by the engineering discipline production demands: TDD, schema rigor, deterministic pipelines. Most AI builders can't do the data; most data engineers can't do the agents — I do both.

EXPERIENCE

AI Build Operator — Agile Strategy Inc (OPC), Founder

2024 — present

Solo studio shipping AI products through an agentic pipeline: **brief** → **design** → **build** → **verify** → **ship**. Focus: **AI agent data engineering** — agents acting on real data at scale, with thirty years of pipeline judgment underneath.

- **ECE cluster monitoring via Claude skills** — an agent doing real ops on a live Elastic Cloud Enterprise cluster; climbing the trust ladder perception → confirmed action → autonomous.
- **Vessel Intel** — live maritime risk-intelligence product; AIS-driven per-vessel risk scoring (severity CRITICAL / HIGH, score out of 70). vessel-intel.pages.dev
- **Vessel Risk (ais_pulbic)** — Flask app for LLM natural-language querying of NOAA AIS data with anomaly detection. Docker · Elasticsearch / Logstash · Ollama (Mistral Nemo, Llama 3.2, Qwen 2.5). github.com/beefkkn/ais_pulbic
- **Web Work** — agentic-pipeline website redesigns shipped across art, education, and healthcare. chinese-school-demos.pages.dev

Stack: Claude · Codex · Ollama · MCP / hooks / skills · agentic pipelines · LLM + SLM · RAG · vision · Python · Node.js

Principal Data Engineer / Sr. Consultant — CBP Advanced Targeting

2013 — present

- Adopted **Lambda data architecture**; designed and built batch + streaming pipelines feeding core business analytics.
- Spark joins over **multi-billion-row, petabyte-scale** data; Kafka + Spark **near-real-time (<5 min latency)**.
- Oracle → Hadoop ingestion (Sqoop, GoldenGate, Delta/Spark merge); HBase, Hive, Impala, Redshift.
- On-prem → **AWS** migration (EC2, EMR, S3, RDS, IAM, VPC); Elastic / ELK / ECE monitoring; Spring Boot microservices (JWT); TDD with GitLab / Gradle / Sonar / Docker.

Env: AWS · Cloudera Hadoop · Spark · Kafka · Elasticsearch/ELK · Spring Boot · Docker · Java 8 · Scala 2.x · Python 2/3 · Reactive (Rx/Reactor)

Sr. Data / Enterprise Consultant — Fannie Mae · IRS · USCIS · DOL · GPO · College Board · Marriott

2002 — 2013

- **Fannie Mae**: MBS trading/servicing data platform; enterprise market-data integration; canonical data modeling (SQL/XSD/Java); SOA (Tibco EMS, Gemfire, BusinessWorks).
- **Federal ECM lifecycles**: IRS E2EP, USCIS E-Verify, DOL case-management modernization, GPO FDSys — Documentum (DFC/DFS/Webtop), SOA & BPM integration.
- **College Board**: secured score / reporting data-transfer framework between College Board and vendors.

Env: Spring · WebLogic/WebSphere · EJB · JPA/Hibernate · J2EE · Documentum · Oracle/DB2 · TIBCO · Rational Rose

Software & Enterprise Engineering — Inrange Technology · ITC Learning

1996 — 2001

- **Inrange**: enterprise network-management software; MVC, Struts, Factory patterns; WebSphere portal.
- **ITC Learning**: 3-tier student-registration platform (AICC standard); full product lifecycle.

THE BRIDGE — PRINCIPLES AS SOLID GROUND

GoF design patterns · Proxy · separation of concerns · **TDD** (red → green → refactor) · **optimistic locking** & correctness-first data discipline · schema rigor, verification loops, deterministic pipelines. Solid ground then; solid ground now — and what the AI work is built on top of.

TECHNICAL SKILLS

AI / now: Claude, Codex, Ollama; LLM + SLM; RAG; vision; MCP / hooks / skills; agentic pipelines; Python, Node.js.

Enterprise: Java/J2EE, Spring / Spring Boot, Hibernate/JPA, SOA, Documentum/ECM; Oracle, MS SQL, DB2, MySQL; WebLogic, WebSphere, JBoss, Tomcat.

Data & cloud: Spark, Kafka, Hadoop, Hive, HBase, Impala, Redshift; ELK / ECE; AWS (EMR, EC2, S3, RDS, IAM, VPC); GoldenGate, Sqoop.

Principles & practice: GoF patterns, TDD, optimistic locking, UML, Docker, Git, CI (GitLab / Gradle / Sonar).

CERTIFICATIONS & EDUCATION

- **AWS Certified Solutions Architect**
- Sun Certified Enterprise Architect (2004) · Sun Certified Java Programmer (2002)
- EMC Proven Professional, CMF (2007)
- **M.S. Computer Engineering** — George Mason University, Fairfax, VA (1997)
- **B.S. Electronics Engineering** — Zhejiang University, Hangzhou, China (1993)