

Ying (Andrew) Zhou

DETAILED RÉSUMÉ · FULL WORK HISTORY

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. Enterprise architecture → data engineering → AI, one continuous discipline. I build agents that act on real data, backed by the rigor production demands: TDD, schema discipline, deterministic pipelines. Most AI builders can't do the data; most data engineers can't do the agents — **I do both.**

NOW — AI OPERATOR

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/beefkknnd/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

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 — what the AI work is built on top of.

ENTERPRISE & DATA ENGINEERING — FULL HISTORY

Principal Data Engineer / Sr. Consultant — CBP Advanced Targeting

May 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 direct mode, GoldenGate CDC, Delta-Lake/Spark merge); HBase (HFile), Hive, Impala, Redshift; AVRO/Parquet/CSV.
- On-prem → **AWS** migration of all big-data services (EC2, EMR, S3, RDS, IAM, VPC); Elastic / ELK / **ECE** monitoring of real-time processing; Spring Boot micro-services with secured data layer (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 · Git · Gradle · Reactive (Rx/Reactor)

Sr. Data Consultant — Fannie Mae

Jul 2012 – May 2013

Next-generation MBS trading / servicing data platform; market-data extraction, archiving and mocking for test; canonical data modeling (SQL / XSD / Java POJO); tool research (Tibco EMS, JRule, BusinessWorks); SOA system integration across utility interfaces.

Env: Spring · WebLogic · JPA · Tibco EMS · Java 1.6SE · SOA · Oracle 11G

Sr. Consultant — U.S. Dept. of Labor (DOL)

Oct 2011 – Jul 2012

Modernized a legacy labor-compensation unit's case-management system with an ECM solution; designed / prototyped the next-generation CASE system for employment-related compensation processing.

Env: Spring · WebSphere · EJB 3.x · JPA · Java 1.6SE · SOA · Captiva · DB2

Sr. ECMS Consultant — EISC

Jan 2011 – Dec 2012

New-product development for a next-generation enterprise content-management system for laboratory data.

Env: Spring · Alfresco 3.4.x · MySQL · iText 4.2

Sr. DCTM Consultant — Primescape (GPO FDSys)

Jun 2008 – Sep 2011

GPO FDSys; full-lifecycle ECM solution on EMC Documentum; served as lead developer from design to implementation.

Env: JBoss · WebLogic · Spring · Documentum 6.5SP3 · DFC · DFS · Webtop · Application Builder · Alfresco

Sr. ECM Consultant — CSC (USCIS E-Verify)

Jan 2008 – Jun 2008

Designed the next-generation E-Verify system; architected an ECM case-management system for USCIS employment-verification, with Documentum + ALBPM integration over SOA.

Env: Documentum 6SP1 · DFC · DFS · Webtop · eRoom 7.4 · ALUI portal · ALBPM6 · TIBCO ESB

Sr. ECMS Consultant — IRS E2EP

Feb 2007 – Dec 2007

IRS E2EP; full-lifecycle Documentum project; served as lead developer from design to implementation.

Env: DCTM 5.3 SP5 · WDK · DFC · Webtop · DAB · BPM · Forms Builder · MQSeries · WebSphere 6

Aug 2006 – Feb 2007

Env: DCTM 5.3 · DFC 5.3 · J2EE · Spring · Hibernate · JBoss · Struts · SQL Server · Pervasive ETL · QuickRule

Mar 2005 – Aug 2006

Env: Rational Rose · J2EE · WebLogic 8 · Struts · Oracle 9i · Hibernate 3 · JUnit · Spring · TIBCO

Sep 2004 – Mar 2005

Env: Rational Rose · J2EE · WebLogic 8 · XMLspy · Struts · Oracle 9i · Hibernate 2 · JUnit

Sep 2003 – Jun 2004

Env: Rational Rose · J2EE · IntelliJ · WebLogic 8 · Struts · Oracle 9i · OJB 1.0.6 · JUnit · HttpUnit

Sep 2002 – Sep 2003

Apr 2002 – Sep 2003

Sep 1999 – Dec 2001

Dec 1996 – Sep 1999

- **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)

AI / now	Claude · Codex · Ollama · LLM + SLM · RAG · vision · MCP / hooks / skills · agentic pipelines · Python · Node.js
Big-data & cloud	Spark · Kafka · Hadoop · Hive · HBase · Impala · Redshift · ELK / ECE · AWS (EMR/EC2/S3/RDS/IAM/VPC) · GoldenGate · Sqoop
Enterprise	J2EE · Spring / Spring Boot · Hibernate/JPA · EJB · SOA · XML · SOAP · UML · Messaging · ECM
RDBMS	Oracle · MS SQL Server · DB2 · MySQL · CloudScape
App servers	WebSphere · WebLogic · Tomcat · JBoss · Apache · IIS · IBM MQ Series
Content mgmt	Documentum (DFC/DFS/WDK/Webtop/DAB/Forms Builder) · Alfresco
SCM / IDE / tools	Git · SVN · CVS · ClearCase · IntelliJ · JBuilder · Rational Rose · OptimizeIT · Docker · Gradle · Sonar
Platforms	UNIX (Solaris, HP) · Linux · Windows · ALBPM CE · TIBCO ESB