

Zhi An

Phone: (571) 213 2214

Email: zhian.job@gmail.com

Full CV:

<https://docs.google.com/document/d/1JwufDUbM-OaRyvWG-av2AYHyx9hSKAnsBN3FzwznXxk/edit?usp=sharing>

Publications:

<https://docs.google.com/document/d/1zxfCrLX0KR1teCTcVw4AbsplXdlaWC6N8mUpuGgrf8/edit?usp=sharing>

Summary

- Recent work: applying LLMs to Electronic Medical Record workflows in production, focusing on safety, prompt design, and provider UX.
 - Deep background in Artificial Intelligence (Ph.D. in AI; research and publications in evidential reasoning and uncertainty).
 - Senior full-stack engineer and architect with experience across healthcare, cloud platforms, and large-scale services.
 - Strong track record of building and modernizing complex systems at AthenaHealth, GE Healthcare, Microsoft, Amazon, ThoughtWorks, and others.
 - Extremely high AI-assisted development adoption ("**98% vibe coding**"), reducing manual coding and allowing deeper focus on applying solid software design and engineering principles.
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Key Skills

- **AI & Data:** LLM-based decision support, prompt and workflow design, data modeling, BI, and large-scale data processing.
- **Languages:** Python, JavaScript/TypeScript, Java, C#, SQL.
- **Cloud & Backend:** AWS (EC2, S3, SQS, SNS, SimpleDB), Azure, distributed systems, high-availability services.
- **Frontend:** React, modern JavaScript, web application development.
- **Databases:** Snowflake, PostgreSQL, Oracle, SQL Server, MySQL.
- **Healthcare:** EMR workflows, medication history, e-prescription (including controlled substances), interoperability.

Recent Experience

Principal Member, Technical Staff — AthenaHealth Inc

January 2023 – Present

- Building a customer-facing decision support system for providers using LLMs.
 - Implementing a "Small Agent Model" that can be injected into workflows so that:
 - PHI data is isolated from the public LLM boundary.
 - Workflow context is automatically collected and formatted into prompts, reducing provider effort and improving accuracy.
 - Resource limits are balanced against prompt and response sizes while filling care gaps.
 - Recommended actions are automated to save provider time.
 - Provider feedback is captured to build datasets for validation and (future) LLM fine-tuning.
- Researched and proposed a technology modernization plan to move Med Zone beyond a legacy Perl-based system.
- Designed and implemented Medication History download improvements to reduce information overload by filtering data before it enters the chart; contributed to broader interoperability architecture.

Senior Staff Software Engineer — GE Healthcare

July 2016 – December 2022

- Led the delivery of an Azure-based service integrated into a legacy GEHC frontend to surface real-time medication information to doctors.
 - Acted as team lead, architect, and scrum master.
 - Navigated stringent security and compliance requirements.
- Supported an Azure service for electronic prescription of controlled substances.
 - Stabilized the development lifecycle.
 - Implemented zero-downtime deployment, monitoring, and alerting.
 - Helped drive the system through DEA certification.

Senior Software Development Engineer — Microsoft

August 2011 – July 2016

- Worked in Windows Phone Services on backend services for developer registration and marketplace metadata.

- Extended data models for multi-program, multi-role developer and vendor scenarios.
- Designed privileged communication schemes between OS-validated apps and backend services.
- Enabled enterprise application deployment and management on Windows Phones without weakening security boundaries.
- Implemented support for selling apps/games in the China market with local currency.

Senior Software Development Engineer — Amazon

March 2008 – August 2011

- Key contributor on backend services supporting the Kindle e-reader.
 - Enabled wireless purchase and download of books.
 - Designed horizontally partitioned data models and performance-tuned critical queries.
 - Built large-scale, high-availability systems, including:
 - An abstraction layer across multiple Oracle databases.
 - UDP-based notification system using consistent hashing (no load balancers / minimal state replication).
 - Made extensive use of AWS services (EC2, S3, SimpleDB, SQS, SNS) and internal deployment/monitoring tools.
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Earlier Experience (Selected)

- **Independent Consultant (2004–2008):**
 - Led BI/data services for a mobile prescribing startup (Oracle RAC, C#, Crystal Reports, MediSpan integration, adverse drug reaction detection).
 - Rebuilt admin suite for a telecom service provider using JBoss, Hibernate, Spring, and portal technologies.
 - Contributed to large government and defense-related systems (Secure Border Initiative, TSA Oracle 11i implementations) with J2EE and Oracle technologies.
- **Senior Software Architect — ThoughtWorks (2003–2004):**
 - Led manufacturing defect monitoring and insurance client review applications using Java, WebSphere, Struts, and XP/Agile practices.
- **Principal Developer / Architect / Project Manager — Private Business Inc. (1993–2003):**
 - Architected and evolved a large commercial application over multiple revisions.
 - Led migration to OO database and 3-tier architecture, significantly improving scalability.
 - Managed multiple successful projects end-to-end, including an Oracle Applications 11i implementation across six modules.

Education

- Ph.D. in Computer Science — Artificial Intelligence / Uncertain Reasoning, University of Ulster, United Kingdom.
- M.S. in Computer Science — Artificial Intelligence / Uncertain Reasoning and Expert Systems, Jilin University, China.
- B.S. in Computer Science, GuiZhou University, China.