RESUME

Spencer Nicol

Principal Platform Engineer, Salt Lake City, Utah

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Summary

I've spent more than a decade building software in healthcare, from data architecture to full-stack web apps. I like finding simple answers to complex problems, and letting the computer do the work it should.

Experience

Principal Platform Engineer, Mayo Clinic Platform

Sep 2024 to present · Remote

- Lead a team of three engineers building Automated Insights, a research app that turns plain-language requests into patient cohorts.
- Own the front-end design, including real-time streaming responses and rich, interactive cohort views for researchers.
- Keep growing the Admin Console and SMART on FHIR integration work started in the previous role.

Senior Platform Engineer, Mayo Clinic Platform

Aug 2023 to Sep 2024 · Remote

- Built the Mayo Clinic Platform design system from the ground up. It's a monorepo with a React component library on Material UI, design tokens in Style Dictionary, fonts, and an icon library. Almost every platform front end now uses it, and it's backed by dedicated engineering and design teams.
- Built the Admin Console, the core app for managing users, organizations, groups, applications, and access, with flexible admin roles for client administrators.
- Built shared auth utilities on NextAuth and a custom access-control system backed by SpiceDB.
- Built a reusable app template that speeds up new front-end apps and keeps them consistent on auth, access control, and design.
- Core member of the Integration team, bringing internal and external SMART on FHIR apps into EHRs.

Senior Software Engineer, b.well Connected Health

Nov 2021 to Jul 2023 · Remote

- Built front-end features with web components and suggested ways to improve the UI.
- Brought in Lit, a framework-agnostic web component library, so our components could be embedded in other products.
- Proposed and led proof-of-concept projects for web component development.
- Worked with the team to add dependency injection tooling, which made a later move to mobile frameworks easier.

Senior Software Engineer, Health Catalyst

Aug 2018 to Nov 2021 · Salt Lake City, Utah

- Redesigned the interface of Atlas, the metadata dictionary site used by the Data Governance team.
- Rebuilt our Azure DevOps pipelines with newer continuous integration features.
- Designed and built a SQL Server auditing system on Azure automation that replaced a vendor product. Audits moved to Azure Blob Storage, with Event Grid triggers for better performance.

Lead Product Architect, Health Catalyst

Jan 2016 to Jul 2018 · Salt Lake City, Utah

- Led development and deployment of the Clinical DOS Mart, which turns raw healthcare data into core parts of the Catalyst Analytics Platform, with documentation and version control for install and upgrades.
- Created HCPosh, a PowerShell module that generates data documentation and diagrams and supports source control for data marts.

Senior Data Architect, Health Catalyst

Jan 2012 to Dec 2015 · Salt Lake City, Utah

- Helped build an automated infection surveillance algorithm for Stanford Health Care that cut nurses' manual chart reviews by 90 to 95 percent.
- Worked with the data science team at Indiana University Health on a predictive model that helped reduce bloodstream infection rates by 30 percent.
- Led an automated review process for patient survey data and comments at Stanford Health Care, screening out protected health information and inappropriate language before comments reached physician profile pages.

Education

Full-Stack Web Development, DevMountain, 2017

Bachelor's degree in Finance, University of Utah, 2009 to 2011

Skills

TypeScript, React, Redux, Lit, Node.js, Python, Git, Microsoft SQL Server, PowerShell, Azure DevOps, GitHub, data warehousing, Microsoft Excel, QlikView

Publications

Assessing patient risk of central line-associated bacteremia via machine learning. National Center for Biotechnology Information (PubMed), April 2018. https://www.ncbi.nlm.nih.gov/pubmed/29661634

- Built features for a model that predicts central line-associated bloodstream infections (CLABSI), using 70,218 patient encounters from a large academic health system. The study found 15 variables that matter for prediction.

Leveraging Internal Knowledge to Create a Central Line Associated Bloodstream Infection Surveillance and Reporting Tool. American Journal of Infection Control (AJIC), June 2013. https://www.ajicjournal.org/article/S0196-6553(13)00406-9/abstract

- Helped build electronic algorithms for CLABSI surveillance that cut the time needed for CDC reporting by more than 90 percent.

Volunteering

Ward Executive Secretary, The Church of Jesus Christ of Latter-day Saints

Jul 2019 to Feb 2023 · West Jordan, Utah

- Managed ward leaders' calendars with Calendly and started OurWardApp.com so members could book their own appointments.

Missionary, The Church of Jesus Christ of Latter-day Saints

May 2004 to May 2006 · Hartford, Connecticut

- Led a team of 12 missionaries for 13 months and learned to speak Spanish fluently.