

Matt | Varghese Mathew

Software Architect

Visionary software architect and interoperability expert with 20 years of experience designing complex reusable systems and standards-based integrations. Demonstrated aptitude for delving deeply into new domains, and crafting precise, minimally invasive, yet highly successful solutions to challenging problems. In search of new learning and growth opportunities that leverage my massive trove of experience and expertise to build fascinating and deeply impactful real-world solutions.


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[Madison, WI](#)

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WORK EXPERIENCE

Software Systems Architect, Health Plans

Epic - Verona, WI

MARCH 2021 - PRESENT

CMS 2027 Interoperability (HL7 Da Vinci CRD/DTR/PAS)

- Technical lead for Epic's implementation of HL7 Da Vinci specifications to automate prior authorization, reducing turnaround time for patients and providers.
- Architected payer-end integration of CRD, DTR, and PAS, enabling real-time requirement discovery and electronic submission to meet CMS 2027 mandates.
- Collaborated with HL7 standards bodies and third-party vendors to refine specifications. Developed a separate comprehensive testing suite web application.
- Became a recognized expert on CRD, DTR, and PAS within Epic and in the industry.

Unified Authorization Requirements

- Architected centralized 'Source of Truth' for authorization requirements, eliminating data silos between provider queries, authorization review, and claims processing.
- Engineered unified data models and 'Gold-Carding' logic to improve consistency and reduce overhead - foundational layer for Epic's CMS 2027 interoperability suite.
- Consolidated fragmented, 'one-off' configuration tools into a reusable editor framework, decreasing development lead time and long-term maintenance.

Medical Necessity Guideline Review Integrations

- Payers use Medical Necessity Guideline integrations with MCG, InterQual etc. to review appropriateness of requested care for the patient's clinical scenario.
- Supported and later led effort to modernize Epic's Medical Necessity Guideline Review integrations with 3rd parties using a SMART on FHIR based approach.
- Engineered a full-stack emulator of vendor systems, using FHIR, SMART on FHIR, and OAuth2 standards, drastically reducing integration defects.
- Became a recognized expert on Medical Necessity Review integrations within Epic.

Senior Software Systems Developer, Clinical Informatics

Epic - Verona, WI

AUG. 2010 - MARCH 2021

Epic Push Notification Broker Service for our Mobile Apps

- Led team of staff and interns developing mission-critical broker service routing all Epic customer-generated push notifications on all Epic mobile apps to APNS and GCM - a foundational requirement for push notifications across Epic.
- Designed with high-availability and redundancy from get go, with a load-balanced primary instance on Azure, and a load-balanced on-prem backup instance.
- Among the first high-stakes Epic production applications deployed on Azure.
- Responsible for oversight and production deployment for three years with traffic in hundreds of millions range and minimal downtime.



SKILLS

> Healthcare and Health Insurance

- Domain knowledge • HL7 FHIR
- SMART on FHIR • CDS Hooks
- CRD/DTR/PAS • ANSI X12 278

> Full stack development

- TypeScript • React
- NPM and Node • .NET/C#
- JSON / JWTs / JWKs • IIS Hosting
- Nginx basics

> AI Tools & LLMs

- Orchestrating large projects with AI
- Maintainable Architecture
- LLM APIs • LLM Connectors
- llama / ollama • Jupyter Lab

> Systems & Networking Strength

- ISO-OSI model • OAuth2
- Familiarity with numerous RFCs
- Encryption standards
- Authentication standards
- Network Architecture & Routing

> Avid GNU/Linux User

- Virtualization: KVM & VMware
- Docker • Hadoop • Raspberry Pis
- SVN & Git



PROJECTS



FHIR-based AI Healthcare Assistant Chatbot

2025 Q2

LLM chat web app to answer provider and patient questions using real EHR data. Provider or patient facing SMART on FHIR launch gives access to FHIR server.

LLM tools allow GPT-model to execute FHIR queries to access real EHR data.

Personal learning project in Epic code-space.

3rd Party Web Application integration framework

- Advocated for and centralized all third party web application integrations across Epic into a single framework for accountability, security, and maintainability.
- Architectural advisor and code-reviewer to the team developing this framework, as an iframe hosted within the Epic web application, needing to address Content Security Policy, Cross Origin Resource Sharing, and a Web Messaging API suite.
- Developed and deployed web applications to test all aspects of this framework.
- Became a recognized expert in Web App Integrations and Security within Epic.

Clinical Decision Support (CDS) Web Service Interfaces

- Architect of all Epic Clinical Decision Support (CDS) Web Service integration capabilities. Includes HL7 FHIR CDS-Hooks and HL7 CDA-based integrations.
- Worked closely with standards bodies co-authoring HL7 CDS Hooks specification.
- Redesigned the decision support configuration to mirror analyst mental-model.
- Developed feedback mechanism for providers to gauge efficacy of decision support.
- Became a recognized expert in CDS-Hooks and REST-ful Web Services within Epic.

Software Development Intern, Clinical Informatics

Epic - Verona, WI

JUNE 2009 - AUG. 2009

- Developed a clinical content comparison utility to allow users to quickly diff clinical content using DOM APIs and LCS diff algorithm, improving content maintainability.

Research Assistant, Condor Distributed Computing

University of Wisconsin - Madison, WI

SEPT. 2008 - MAY 2010

- Developed capability to run jobs inside VMware Virtual Machines on Condor High Throughput Computing pools, allowing deterministic runtime environments.

Software Engineer, Enterprise Routing

Cisco Systems - Bangalore, India

JUNE 2006 - JULY 2008

- Developed configuration interface for NetFlow and logging infrastructure for Traffic Accounting on Cisco GSR series routers.
- Platform support for 7500 series routers including Distributed Multi-Link Protocol.

EDUCATION

Master of Science, Computer Science

University of Wisconsin - Madison

2008-2010

- GPA: 3.94 / 4.0 | Fully funded Research Assistantship
- Focus: Systems, Networking, Distributed Computing

Bachelor of Technology, Computer Science and Engineering

National Institute of Technology - Calicut, India

2002-2006

- CGPA: 9.60 / 10.0 | Branch Topper | Gold Medalist

Web Based SSH Client

2025 Q3

Proof of concept allows Web Based SSH access to unix servers, Caché etc.

Avoids Citrix licenses etc., saving money for organizations extending moderated text access to users.

↳ github.com/mattvarghese/WebSSHClient

HTTP Auto-responder

2024 Q4

Web Service 'development tool' allowing preconfigured responses and logging for common HTTP verbs.

Similar to Postman Mock Server, but keeps traffic within the enterprise or local network.

↳ github.com/mattvarghese/HttpResponder

JSON Library for M/Caché

2020

RFC-compliant JSON Serializer and Deserializer for ANSI-M/Caché.

Nearly Half of all Epic's Database AI integrations leverage this library.

Example of long-term vision in creating powerful generic reusable tooling.

MIPS Pipeline Simulator

2005, 2025

5-Stage pipeline simulation of a MIPS microprocessor hardware. Includes cache simulation, assembler, and terminal app.

Multithreaded application developed with POSIX APIs, C++, Flex, and Bison in 2005.

In 2025, developed a Small-C compiler above the assembler with AI-assistance.

↳ github.com/mattvarghese/coconut

This Resume ;-)

2026 Q1

This resume is formatted as a React web app that I developed with AI-assistance!

↳ github.com/mattvarghese/my-resume

EPIC CERTIFICATIONS

Web Tech Camp :: Server Tech Camp ::
Clarity Data Model :: EpicCare Inpatient Suite ::
Order Transmittal :: Referrals and Authorizations :: Tapestry Health Plan Suite

OTHER

- ⚡ Novice (H2) rated hang-glider pilot
- ⚡ Solo endorsed VFR student pilot
- ⚡ ASA 101,103/104,105 rated sailor
- ⚡ Learned Elementary Russian as adult
- ⚡ Avid reader, ice-skating, volleyball, XC-skiing, bicycling