






Matt | Varghese Mathew

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Software Architect

Visionary software architect and interoperability expert with 20 years of experience designing complex reusable systems and multi-party integrations. Demonstrated aptitude for delving deeply into new domains, 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 knowledge and skills to build fascinating and deeply impactful real-world solutions.

-  Masked / Ask Me
-  Masked / Ask Me
-  Madison, WI
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-  github.com/mattvarghese

WORK EXPERIENCE

Software Systems Architect, Health Plans

 Epic - Verona, WI

MARCH 2021 - PRESENT

CMS 2027 Interfaces

- Technical lead for Epic's implementation of HL7 FHIR-based CMS 2027 regulatory requirements, spanning HL7 Da Vinci CRD, DTR, and PAS Specifications.
- Also led development of end-to-end testing application towards test-driven development.
- Mastery of CRD, DTR, PAS, FHIR, SMART on FHIR, OAuth2, and Web Technologies, as well as close coordination with HL7 Standards bodies and 3rd Party App developers.

Unified Authorization Requirements

- Led effort to model, build, and unify how health plan prior authorization requirements are captured and executed within Epic.
- Deep domain research and understanding, meticulous data-modeling, and reworking various one-off implementations into one consistent and unified whole across Epic.
- Consolidated diverse 'similar but different' configuration editors into a consistent reusable configuration editor framework, reducing future maintenance and development lead time.

Guideline Review Integrations

- Led effort to diagnose missing pieces / loose ends in a partially complete project I inherited. Planned and executed project successfully, delivering a mature, robust, and low-defect implementation used today at hundreds of Epic customers.
- Developed fully functional internal web app to test above project by emulating 3rd party vendor systems, using FHIR, SMART on FHIR, and OAuth2 standards.

Senior Software Systems Developer, Clinical Informatics

 Epic - Verona, WI

AUG. 2010 - MARCH 2021

Epic Push Notification Broker Service

- Led team of staff and interns developing the broker service for forwarding all Epic customer-generated push notifications on all Epic mobile apps to APNS and GCM.
- 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

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.

Chat based interface with sliding context window for conversations.

Personal learning project in Epic code-space.

3rd Party Web Application integration framework

- Advocated for and centralized all third party web application hosting within 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, a Web Messaging API suite, etc.
- Developed and deployed web applications to test all aspects of this framework.
- Became a recognized leader in Web Applications and Security within Epic.

Web Service Decision Support Interfaces

- Architect of all Epic Web Service Decision Support integration capabilities. Includes HL7 FHIR CDS-Hooks based integrations and HL7 CDA based integrations.
- Worked closely with Standards bodies; co-authored CDS Hooks specification.
- Redesigned the decision support configuration to mirror user mental-model.
- Developed a feedback mechanism for providers to return feedback on efficacy of decision support interventions.
- Became a recognized leader in 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 end users to quickly diff clinical content using DOM APIs and LCS diff algorithm.

Research Assistant, Condor Distributed Computing

University of Wisconsin - Madison, WI

SEPT. 2008 - MAY 2010

- Developed features to automatically transform regular batch jobs into virtualized jobs running inside VMware Virtual Machines on Condor High Throughput Computing pools.

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: 3.938 / 4 | Fully funded Research Assistantship with Condor
- Focus: Systems, Networking, Distributed Computing

Bachelor of Technology, Computer Science and Engineering

National Institute of Technology - Calicut, India

2002-2006

- CGPA: 9.60 / 10 | Branch Topper | Gold Medalist
- Perfect 10.0 GPA in two semesters

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. Includes cache simulation, assembler, and terminal.

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

In 2025, added 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 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