

James Carnley

Full-Stack and Systems Engineer, Chicago, IL

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// summary

Full-Stack and Systems Engineer with an M.S. in Computer Science and 15+ years across healthcare software, Ethereum infrastructure, and distributed systems. Combines a decade at Epic Systems with independent Ethereum engineering and the creation of the Ethereum File System (EFS). Experience spans cross-organization integrations, federated identity, automated testing, production reliability, and AI-assisted software development.

// experience

Ethereum File System (EFS) Creator Jun 2024 – present

- › Created and shipped an open-source Ethereum file system, leading architecture and AI-assisted implementation across smart contracts and web clients.
- › Architected a topic-based data organization protocol to enable deterministic, efficient access to onchain user information.
- › Designed data structures for onchain collaboration and discoverability with attention to gas costs.
- › Built web clients using React/Next.js and Lit/Web Components, integrating the Ethereum Attestation Service (EAS), IPFS, and ENS for browsing and managing onchain data.

Independent Ethereum Engineer Infrastructure and Protocols Sep 2020 – present

- › Operated multi-client Ethereum validator infrastructure and participated in Beacon Chain genesis and pre-mainnet testing.
- › Monitored consensus-layer performance of Prysm, Lighthouse, Teku, Nimbus, and Lodestar using Prometheus and Grafana to analyze missed attestations, debug proposal failures, and optimize peer connectivity.
- › Practiced chaos engineering and deterministic state testing to harden network resilience against failure scenarios.
- › Operated Secret Shared Validator (SSV) nodes, contributing to validator decentralization and resilience.
- › Contributed IT expertise to client teams, providing feedback to ensure network stability during critical transitions.
- › Selected speaker at Devcon 8 (November 2026): “Who Can Turn Off Your Ethereum App? A Full-Stack Walk-Away Test.”
- › Helped lead activities in the ETHStaker, ETHChicago, and Madison Blockchain communities.

NANDA Independent Contributor Jul 2026 – present

- › Contributed merged improvements to NANDA Town's agent test harness, strengthening scenario coverage and validating quote responses against requested items and constraints.
- › Designed and prototyped agent discoverability, portable identity, and trust mechanisms for interoperable agent networks.

Epic Systems Corporation Software Engineer Jun 2010 – Feb 2021

- › Developed software for the EpicCare Link team, creating a web interface that allowed outside physicians access to patient information.
- › Served as Site Reliability Engineer (SRE) for the team, handling incident response, root cause analysis, and performance monitoring.
- › Architected automated end-to-end testing frameworks using Selenium to validate complex workflows and ensure deterministic behavior.
- › Designed a federated SSO and trust system with cross-organization data synchronization, standardization, usage tracking, and notifications, supported by a custom gossip protocol.
- › Modernized the web platform from HTML 2 to valid HTML 4, CSS 3, and JavaScript, enabling full support for Google Chrome and mobile browsers.

- › Refactored and simplified CSS structures to increase developer productivity and enable customers to easily create custom themes, while integrating jQuery and jQuery UI widgets into the application's base structure.
- › Managed a team that created a new graphing and charting library based on D3.js.
- › Developed prototypes using a serverless architecture on Microsoft Azure.
- › Coordinated with healthcare providers and administrators to design a system for secure electronic consults containing media, building the media upload control using jQuery, ASP, and VB6.
- › Developed video collaboration tools for medical video visits on the web, integrating with Adobe and Vidyo products.
- › Engineered a solution for single sign-on (SSO) from Epic to third-party systems in web applications.
- › Integrated PACS and BLOB servers through standard interfaces and built custom integrations for third-party vendors.
- › Enabled support for using web products across multiple time zones.
- › Kept current with the latest web technologies and led developer education on new techniques.

Lamar University Research Assistant to Dr. Bo Sun

Feb 2009 – May 2010

- › Designed and implemented TORP, the TinyOS Opportunistic Routing Protocol, an opportunistic routing protocol for wireless sensor networks.
- › Implemented the protocol in C and nesC on the TinyOS wireless sensor network operating system.

Mary and John Gray Library Systems Programmer and Administrator

Mar 2006 – Jan 2009

- › Created ASP.NET forms that let librarians add any number of books and catalog them using information fetched from external sources via AJAX.
- › Developed an array of Perl and shell scripts to manage data from internal library systems and SirsiDynix.
- › Built and configured secure images for a large campus lab of workstations using Microsoft SteadyState and custom scripts, including advanced privilege and user management.

// skills

DevOps & infrastructure

Distributed systems, System administration, SRE, Incident response, Root cause analysis, Chaos engineering, Prometheus / Grafana, Azure, P2P gossip protocols

Tools

Docker, JSON-RPC, GraphQL, Selenium, Hardhat, Foundry, Viem / Ethers.js, React, Next.js, Lit, Node.js, Git, Tailwind, IPFS, Visual Studio / VS Code

Languages & frameworks

JavaScript, TypeScript, Solidity, C#, GraphQL, ASP.NET, jQuery, HTML, CSS, C, C++, Java, Python, SQL

Domain knowledge

Ethereum, Distributed systems, Communication protocols, API integration, Agent interoperability, Fuzzing, Deterministic state testing, Single sign-on, Two-factor authentication, Web & mobile development

// education

M.S. Computer Science, Lamar University 2008 – 2010

B.S. Computer Science, Lamar University 2004 – 2008

President of Upsilon Pi Epsilon (2007–2008) and the Association for Computing Machinery (2005–2007). Competed in UIL (state level), TCEA, and ACM programming competitions.