

# Joshua Guyette

Software Engineer | AI Systems Architect

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## Professional Summary

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Software engineer building production-grade AI agent infrastructure in Rust and TypeScript. Creator of the Brainwires ecosystem, a suite of tools for autonomous agent orchestration, semantic code understanding, and adaptive prompting. Combines deep full-stack web experience with systems programming to deliver reliable, high-performance AI systems. Brings extensive domain knowledge built over years of hands-on engineering, providing the foundation that matters most as software development rapidly evolves.

## Core Competencies

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### AI Agent Systems

Multi-agent orchestration  
LLM tool calling & MCP  
Semantic search / RAG  
Adaptive prompting  
Agent security & permissions  
Prompt engineering  
Context window management  
Tool orchestration

### Systems Programming

Rust (async, Tokio)  
Tree-sitter AST parsing  
WASM plugin systems  
Vector databases (LanceDB)  
Embedded scripting (Rhai)  
Memory-safe concurrency  
Cross-compilation (WASM)  
FFI & .NET interop

### Full-Stack Web

React / React Native  
Next.js / TypeScript  
Supabase / Firebase  
Node.js / Express  
Docker / Linux / Git  
REST & WebSocket APIs  
CI/CD & GitHub Actions  
Responsive design / CSS

## Key Projects

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### Brainwires Framework

Production-grade Rust framework for autonomous AI agents. 25+ modules, 413+ tests, 94% coverage.

*Rust, LanceDB, FastEmbed, Tree-sitter, MCP SDK, Tokio*

### Brainwires Studio

AI development platform with multi-agent orchestration and real-time collaboration.

*Next.js, React 19, TypeScript, Supabase, Anthropic SDK*

### Thalora Web Browser

Headless web browser built from the ground up in Rust with a .NET Avalonia GUI, WASM support, and MCP integration.

*Rust, .NET Avalonia, WASM, Boa JS Engine, WebRTC, MCP SDK*

### Brainwires CLI

Terminal AI interface with rich TUI, MCP integration, semantic search.

*Rust, MCP SDK, ratatui*

### Project RAG

Semantic code search via Tree-sitter, vector embeddings, and BM25 over MCP.

*Rust, Tree-sitter, Vector Search, BM25*

### Tool Orchestrator

LLM tool call orchestration with WASM plugins and Rhai scripting.

*Rust, WASM, Rhai*

### Supabase Client SDK

Rust client for Supabase with WASM support and derive macros.

*Rust, WASM, Supabase*

## Work History

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### Senior Full Stack Developer & System Administrator

June 2021 – Present

*SuperApps LLC*

Full-stack development and system administration across web and mobile projects. Architected and deployed production applications using React, React Native, Next.js, TypeScript, and cloud services including Firebase and Supabase.

### Driver

May 2016 – June 2021

*Uber / DoorDash*

Provided flexibility to study software development, building foundational skills in full-stack web and systems programming.

### Computer Sales Associate

February 2013 – November 2015

*Best Buy*

## Education

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**University of Wisconsin, Oshkosh** — Computer Science

2006–2007, 1995–1996

**Fox Valley Technical College** — Electronic Technologies AAS

1998–2000