

# PAIGE JULIANNE SULLIVAN

Full-Stack Polymath • Cloud Architect • AI Engineer • Language Designer

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Available for Part-Time, Contract, and Consulting Engagements • Remote

## EXECUTIVE SUMMARY

**Polymath technologist with 30+ years solving complex problems across every layer of the stack**—from designing domain-specific languages and graph engines to deploying containerized microservices on GCP. Four-time startup founder currently building Topology.Cloud, a comprehensive building infrastructure management platform featuring a custom formula language, real-time WebSocket collaboration, and 9,500+ component definitions. Equally comfortable writing PHP extensions in C, training local LLMs, or leading teams at IBM and Cisco. **Known for rapidly mastering any technology and delivering elegant solutions to problems others consider impossible.**

## TECHNICAL ARSENAL

<b>Languages</b>	Go, PHP, Python, JavaScript, TypeScript, Node.js, C/C++, Bash, SQL, HTML/CSS
<b>Frameworks</b>	React, Vue, Laravel, Symfony, Zend, jQuery, Tailwind CSS, WebAssembly (WASM)
<b>Cloud &amp; DevOps</b>	GCP (Cloud Run, Cloud SQL, Memorystore), AWS, Azure, Docker, Terraform, CI/CD, GitHub Actions
<b>AI &amp; ML</b>	Claude API, Google Gemini, Local LLM deployment & training, Prompt engineering, AI integration
<b>Databases</b>	MongoDB, PostgreSQL, MySQL, MariaDB, Redis, MS SQL Server
<b>Specializations</b>	DSL Design, Graph Engines, Real-time WebSocket, Compiler/Parser Design, System Architecture

## PROFESSIONAL EXPERIENCE

**Topology.Cloud (Founder)** | Nov 2025 – Present

*Founder / Chief Architect*

**Designing and building a comprehensive Building Infrastructure Management Platform** from scratch—a digital twin system for modeling electrical, plumbing, HVAC, networking, A/V, security, and fire protection systems using directed acyclic graph architecture.

- ▶ Architected complete platform: Go backend (Graph/Formula/Validation engines), React + WebAssembly frontends, MongoDB/PostgreSQL/Redis data layer
- ▶ Designed Topology Formula Language (TFL)—a custom DSL with lexer, parser, and AST for building code compliance validation (NEC, IBC, IPC)
- ▶ Built real-time collaboration system using binary WebSocket protocol with presence awareness and conflict resolution
- ▶ Created Component Modeling Language (CML) with 9,500+ XML-based component definitions across 7 building trades
- ▶ Deployed on GCP using Cloud Run, Terraform IaC, Cloud CDN, and automated CI/CD pipeline with zero-downtime deployments

**Johns Hopkins University, Bloomberg School of Public Health** | Aug 2020 – May 2025

*Programmer Analyst — Major Extremity Trauma Research Consortium*

**Sole technical owner** of mission-critical infrastructure supporting **40+ clinical trials, 1,800 users, and 150,000+ participants** for the nation's largest orthopedic trauma research consortium.

- ▶ Architected complete stack (RHEL, Apache, PHP, MariaDB) with disaster recovery—full restore from bare metal in <15 minutes
- ▶ Developed 7 open-source REDCap modules adopted internationally; built conversational SMS and custom browser extensions
- ▶ Selected for Johns Hopkins Academy for Women and Leadership (Carey Business School, 2025)

**Target PharmaSolutions (now Target RWE)** | Aug 2019 – Aug 2020

*Senior Software Engineer*

- ▶ Led REDCap platform for Phase IV clinical trials; designed AWS dashboard reducing deployment from 60+ min to <5 min

**IBM Corporation, z Series Division** | Jan 2019 – Aug 2019

*Senior Software Engineer*

- ▶ Developed TypeScript VSCode extensions for mainframe COBOL development; ported to Theia web IDE with z/OS deployment

**Boolean Informatics (Founder)** | Oct 2014 – Jan 2019

*Independent Software Engineer*

- ▶ Delivered 50+ applications: cross-platform mobile with GPS tracking, Alexa voice integration, enterprise PXE-boot solutions

**Concert Telecommunications (Founder)** | Jan 2008 – Oct 2014

*Founder / Lead Engineer*

**Built a complete hosted VoIP phone system from scratch**—every line of code, every server, every customer deployment.

- ▶ Architected multi-datacenter infrastructure (3 US regions) achieving 99.999% uptime; full stack in PHP/Python/C++

**TheraSim** | 2010 – 2012

*Senior Software Engineer / Lead Architect*

- ▶ Led rearchitecture to MVC; designed DSL for medical case authoring; built offline LiveCD for internet-limited regions

**Cisco Systems** | 2009 – 2010

*Senior Software Engineer*

- ▶ Developed VMware management tools, Cisco IOS config library, and enterprise data warehouse for cross-service analytics

**IBM Corporation, BladeCenter Division** | 2004 – 2008

*Advisory Software Engineer — Technical Lead*

**Technical lead for BladeCenter Advanced Management Module**—embedded firmware on custom real-time Linux.

- ▶ Rewrote firmware from C/Nucleus RTOS to PHP/Apache; developed C extension for hardware bus communication (I2C, SMBus, IPMI)
- ▶ Created OEM white-label toolkit; directed team of 5; introduced CI/CD for firmware testing

## EARLIER CAREER

**Boolean Systems (Founder)** | 2001 – 2004

*Founder / CEO*

- ▶ Developed just-in-time (JIT) manufacturing simulator for industrial process optimization

**HiddenMind Technology** | 2000 – 2001

*Lead Web Developer*

- ▶ Lead developer of company's Internet, Intranet, and Extranet systems; enterprise web architecture

**MCI/Worldcom** | 2000

*Lead Web Developer*

- ▶ Lead developer for enterprise-wide health monitoring and outage notification system; secondary work on 811 geolocation system

**Summus Limited** | 1999 – 2000

*Web Developer*

- ▶ Implemented online ordering system and automated serial number generation for commercial software products

**AT&T, Human Resources Information Systems** | 1999

*Lead Web Developer / Usability Lab Assistant*

- ▶ Lead developer of the AT&T Retiree Intranet system; conducted usability testing and user experience research

**Dynamic Designs (Founder)** | 1995 – 1998

*Founder / CEO*

**Founded first company at age 16**, building over 100 websites during the dawn of the commercial Internet.

- ▶ Created viral virtual greeting card website with significant organic traffic
- ▶ Developed web-based helpdesk/ticketing system—an early SaaS product before the term existed

## EDUCATION & CREDENTIALS

**Academy for Women and Leadership** — Johns Hopkins Carey Business School (2025)

**NC A&T State University** — Computer Science (1998–1999); promoted to Assistant Webmaster within 2 months of enrollment

## LEADERSHIP & ADVOCACY

**Staff Assembly Representative** — JHU Bloomberg School of Public Health (2022, 2024); Employee Relations & Compensation Subcommittee

**Research Staff Advisory Committee Member** — Johns Hopkins University (2024)

**Published Author** — Op-ed in INDY Week (April 2025)

**Guest Speaker** — NC State University, Meredith College, UNC-Chapel Hill, Duke University, Johns Hopkins University (2006–Present)