

Damien House

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Fractional CTO, senior engineering advisor, and hands-on principal architect helping founders and platform teams move from concept to production with clear architecture, governed delivery, and durable systems. Combines 20+ years of platform modernization, DevOps, and Drupal architecture with hands-on R&D in Agentic Engineering, Agent Experience (AX), AI-augmented delivery, retrieval-backed knowledge systems, and context-governed workflows. Uses AI to compress legacy modernization and prototyping cycles from traditional 3-to-6 month timelines into 3-to-4 week execution paths, while preserving architectural discipline, security, accessibility, and long-term maintainability.

CORE COMPETENCIES

- **AI & Agentic Engineering:** Design agentic engineering workflows that orchestrate LLMs, tools, and specialized agents to convert product intent into working software and ongoing maintenance operations; establish the guardrails, context management, and review controls required for governed, high-trust delivery.
- **Product & Systems Architecture:** Translate ambiguous product ideas into clear architectures, technical roadmaps, and implementation plans; bridge the gap between 15-minute flat-code AI prototypes and production-ready Drupal systems by converting fragile concepts into robust architectural migrations in as little as 2 to 3 hours.
- **Full-Stack & Platform Engineering:** Build and scale modern web applications and services with a focus on performance, reliability, observability, and security; use AI-enabled modernization patterns to compress legacy migration efforts from 3-to-6 month cycles into 3-to-4 week execution windows, with comparable enterprise approaches cutting a 3-month multi-developer effort to 1.5 months.
- **DevOps & Developer Experience:** Design cloud-native architectures, CI/CD pipelines, containerized environments, and internal tooling that improve delivery velocity and release safety; deploy AI code review, PR summaries, and visual regression workflows that reduce PR review time by 20%, catch 15% to 30% more defects, reduce rework by 10% to 25%, and save 5 to 10 hours of manual QA per team per week.
- **Leadership, Mentorship & Collaboration:** Lead small, cross-functional teams; partner with founders, PMs, and designers; mentor engineers on both fundamentals and AI-assisted workflows; translate complex technical trade-offs for non-technical stakeholders.
- **Research, Design Science & Experimentation:** Applying Design Science Research, Human-Centered Design, and structured experimentation (MVPs, prototypes, spikes) to de-risk new product ideas and converge on solutions that are technically sound and user-informed.

TECHNICAL SKILLS

- **Languages & Frameworks:** HTML, CSS, TypeScript/JavaScript (Node.js, React, Next.js); Python (API services, scripting, ML/LLM prototyping); PHP (Drupal 11-7); SQL (PostgreSQL, MySQL, MariaDB), NoSQL; GraphQL & REST API design.
- **AI, Agentic Systems & Automation:** Large Language Models (OpenAI, Anthropic); AI-assisted development (GitHub Copilot, Cursor, Claude Code / Projects); LLM application patterns (RAG concepts, tool-calling / function calling, multi-agent orchestration, prompt engineering); workflow & experimentation (rapid prototyping of AI-powered features, evaluation and refinement loops); frameworks (BMAD, RuFlo).
- **DevOps & Platform:** Cloud (Amazon, Microsoft, Google); containers & orchestration (Docker, Kubernetes); CI/CD (GitHub Actions and similar pipelines); infrastructure-as-code & automation (Terraform, Ansible); observability & reliability (logging, monitoring, tracing and performance tuning).
- **Web & Content Platforms:** Decoupled, headless, and traditional CMS with Drupal, including API-first architectures; classic theming and modern front-end patterns with React/Next.js, component libraries, and design systems; accessibility and standards (WCAG, responsive design, performance-conscious UX).
- **Collaboration & Product Tools:** Jira, Confluence, Figma, Miro; Git/GitHub, code review workflows; remote collaboration (Slack, Zoom, distributed-team practices).

WORK EXPERIENCE

Fractional CTO & Principal Architect – 109.studio (June 1996 – Present, Washington, DC / Remote)

Independent studio providing fractional CTO leadership across product development, agentic systems, and platform engineering for startups and small teams.

- **Prototype-to-production architecture:** Turn founder ideas and mockups into versioned specs, technical roadmaps, and production-ready platforms using Agentic Engineering frameworks with AI-augmented execution, compressing 3-to-6 month prototype and modernization cycles into 3-to-4 week delivery paths without sacrificing governance, accessibility, or review discipline.
- **Governed agentic workflows:** Design explicit action surfaces and retrieval-backed context layers that improve answer accuracy by 40% to 60%, reduce no-result dead ends by 50%, and let AI safely scaffold services, generate tests, documentation, and workflow automation under human supervision.
- **AI-enabled content operations:** Build AI-driven governance systems that expand audits from 50-page samples to 100% coverage across 6,000+ content items, reduce audit cost to roughly \$400 in API compute, cut alt-text generation time by 80% to 90%, reduce editorial review load by 40% to 60%, and improve accessibility audit pass rates by 40% to 60%.
- **Cloud-native delivery, DevEx, and DevSecOps:** Stand up cloud environments, CI/CD pipelines, automated testing, and AI-assisted workflows that reduce PR review time by 20%, catch 15% to 30% more defects, cut rework by 10% to 25%, save 5 to 10 hours of manual QA per team per week, and catch 50% to 70% of vulnerabilities before merge.
- **Fractional technical leadership:** Serve as fractional CTO and principal architect, clarifying trade-offs across speed, cost, robustness, and AI adoption while leaving teams with stronger architecture, documentation, workflows, and delivery foundations.

Senior Technical Consultant – GXM Consulting (Aug 2022 – Apr 2025, Washington, DC / Remote)

U.S. Department of Commerce, International Trade Administration: trade.gov

- **Platform Modernization & DevOps:** A high-traffic federal trade platform was constrained by legacy hosting, fragile delivery practices, and developer friction; architected the migration from Azure to Acquia Cloud, implemented a Composer-based deployment pipeline, and standardized development environments, reducing deployment risk, accelerating onboarding, and creating the delivery foundation required to introduce AI-assisted review, security scanning, and test automation.
- **Enterprise Drupal Engineering:** A large, highly structured content model was difficult to evolve safely at scale; engineered and maintained 24 custom modules across a platform with 61 content types, 338 fields, 72 views, and 294 templates, creating the operational substrate for future automation, governance, search, and content intelligence while strengthening accessibility, reporting, and long-term maintainability.
- **Cross-Functional Leadership & Documentation:** Sustainable delivery was limited by accessibility debt, incomplete documentation, and inconsistent team practices; remediated the platform to WCAG 2.2 standards, authored SOPs for Docker/DDEV and deployment workflows, and improved sprint and environment practices, strengthening reliability, DevEx, and the organizational readiness needed for AI-assisted code review, regression testing, and lower-rework delivery.

Senior Technical Consultant – Innosoft Corporation (Jul 2021 – Jun 2022, Washington, DC / Remote)

U.S. Department of Commerce, National Telecommunications and Information Administration: NTIA.gov

- **Legacy System Migration:** A public-facing federal site faced legacy platform risk and modernization pressure; served as sole technical lead for a Drupal 7 to 9 migration, planning and executing the full code and infrastructure transition through iterative two-week cycles.
- **Full-Stack Development & Compliance:** The replacement platform had to launch without disruption while improving usability and compliance; built custom modules and a new theme, delivered responsive and accessible experiences, integrated D3.js visualizations for dashboards, and created a forward-compatible architecture for future transition to a PaaS environment.

Senior Technical Consultant – Focused Management, Inc. (May 2017 – Dec 2020, Washington, DC / Hybrid)
U.S. Department of Agriculture, Office of the CIO – Platform Services

- **Enterprise Platform Overhaul:** Thirteen mission-critical sites were trapped in fragmented on-prem infrastructure with operational inconsistency and credential risk; designed and led migration to a unified Linux/Apache/MariaDB stack, introduced the organization’s first production containerized platform with Rancher-orchestrated CI/CD, implemented enterprise SSO, and delivered the new platform three months early with stronger security and deployment stability.
 - **DevOps & Continuous Improvement:** Operations teams needed more than a one-time migration; established scalable maintenance practices, automated recurring workflows, and improved content and deployment processes that reduced toil and friction, strengthened release discipline, and created a foundation for automated reviews and regression testing.
- Infrastructure & Security Leadership:** A 24/7 environment demanded resilient governance and disciplined change control; handled high-severity infrastructure issues, hardened patching and hotfix procedures, and reinforced operational safeguards in alignment with

Senior Technical Consultant – Blackstone Technology Group (Nov 2013 – Dec 2016, Arlington, VA / Hybrid)
U.S. Department of Agriculture, Food and Nutrition Service (FNS) & Agricultural Marketing Service (AMS): fns.usda.gov, ams.usda.gov

- **Web Modernization Projects:** As Drupal SME and lead developer, directed the rebuild of the AMS public website from a legacy system to Drupal 7. Guided the project through detailed requirements analysis, architecture design, and iterative development across multiple major releases. Integrated complex features (e.g. Market News data integrations, PIV card login) and delivered them within aggressive timelines, earning trust from USDA stakeholders.
- **Agile Delivery & Performance:** Drove significant improvements in team productivity and software quality. Coached a cross-functional team through dozens of sprints, resulting in a 67% increase in sprint velocity (from 18 to 30+ story points) during critical phases. Ensured all deliverables met “Definition of Done” and received client acceptance, contributing to consistent “Exceeds Expectations” performance evaluations.
- **Innovation and Reusability:** Championed the creation of a reusable Drupal-based Web Content Management baseline to accelerate future projects. Established standardized deployment checklists and best practices that improved predictability and stability for subsequent agency initiatives. Actively participated in internal R&D (e.g. exploring headless CMS and Node.js prototypes) to future-proof the team’s skills and solutions.

EDUCATION

- **Morgan State University** – Electrical Engineering, 1997–1999
- **Baltimore Polytechnic Institute** – STEM / Advanced College Prep, 1993–1997