Daniel Blackburn

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Experienced software engineer with 20+ years of full-stack development from scratch and a proven track record of designing, testing, explaining, building, debugging and evolving scalable, mission-critical platforms with a focus on clarity, low operational overhead, and long-term maintainability.

Known for creating thoughtful abstractions, novel solutions and high-leverage internal tools that reduce friction and empower development. I enjoy making life easier for tomorrow, learning new things and approaching challenges with curiosity, pragmatism and empathy.

Experience

Holmes Corporation – *Software Engineer/ Architect Full Stack 2007 – May 2025 | Eagan, MN*

- Developed secure, externally facing API toolsets, enabling trusted organizations to utilize their e-commerce platforms for internal order execution.
- Authored and maintained a secure, multi-node Azure cluster IAM system in Zope2 and Python, serving over 200,000 users and 500,000 accounts, and centrally delivering RPC-packaged information to remote servers regarding authenticated users and context roles.
- Created integration tools to accept flat-format XML payloads, delegating the responsibility of mass user creation and virtual classroom establishment to selected customers.
- Architected secure, modular authentication flows, custom SSO, and API integrations for federated, multi-tenant access for a segment of our clientele, fostering a more self-supportive role for advanced partners.
- Designed proprietary CDN and complex security models, extending authorization frameworks to transform simple role permissions into a sophisticated matrix suitable for upselling to users with a diverse range of products.
- Developed a complex mailing list creation tool from marketing data input by our global partners, facilitating more accurate and precise upsell emails.
- Incrementally refactored the stack for multilingual and RTL support (French, Spanish, Chinese, Arabic) with modern responsive JavaScript enhancements, permitting "through-the-web" (TTW) editing of production templates for outage messages personalized by language and product allowing for over 98% uptime YOY.
- Built diagnostic, polyglot stack, and tracing tools across a multi-node cloud Azure cluster to reduce support workload and enhance transparency.
- Designed, implemented, upgraded, and maintained normalized PostgreSQL schemas to streamline business logic and reduce codebase complexity with performance metric-based CTE recursive queries and triggers, logarithmically improving component performance.
- Implemented enterprise web administration toolsets for debugging customer experiences, including highly logged impersonation capabilities.
- Implemented a central SQL-based comprehensive logging system for all nodes, with the ability to modify runtime log levels "through-the-web," thereby saving countless hours in identifying isolated or node-specific issues.

Bayview Financial LLC – *Software Engineer*

2007 – 2008 | Coral Gables, FL

● Developed CI/CD-enabled document generation system in Python/Zope3, integrating with J2EE, Adobe print stack, and XML-based rules engine, generating all contracts for new real estate loans.
● Built AJAX-based loan pricing UI with almost full Selenium test coverage.
● Created REST-based tools to replicate production loan data for safe, fast QA environments.

University of Miami Medical Center *– Software Specialist II 2002 – 2007 | Miami, FL*

● Automated MySQL–Active Directory sync for streamlined access provisioning.
● Reverse-engineered legacy C-based automation system to allow internal modifications.
● Built internal grading and incident tracking systems for academic use.
● Delivered a video/podcast streaming platform to support a modernized curriculum

Technologies

Languages: Python, JavaScript, SQL, Bash, HTML, CSS, XML, C, C++
Frameworks/Toolkits: SQLAlchemy, FastAPI, Zope Toolkit (ZTK), BlueBream, Plone, Requests, pydantic, Docker, pypi,, Uvicorn,Strawberry GraphQL, Asyncpg, emacs
Databases: PostgreSQL, MySQL, ZODB, NoSQL
DevOps & Infrastructure: Docker, Buildout, Git, Mercurial, Subversion, Virtualenv, Memcached, OneTrust , GitZHub Actions, Build Triggers, Google Cloud Console, DNS, apache, SSL, SSO
Testing & QA: TDD, CI/CD, Unit Testing, Selenium, Showcase, Runtime Profiling, System Diagnostics, pytest, coverage , pytest-asyncio, pytest-mock
Web & APIs: REST, OAuth2, JSON, RPC, AJAX, Dojo, JQuery, JWT, python-jose, ssl, Cryptography, Event based development
Internationalization: i18n, RTL support, multilingual UI infrastructure
AI/LLMs: Prompt engineering for refactoring, automation, validation, R & D. Some Agentic Project Pair Programming, Agent management.
Platforms: Linux (Red Hat, CentOS, Debian), macOS, BSD, Windows, VMWare, Google Cloud Console

Open Source

pypgsvg: An open-source tool for visualizing PostgreSQL schemas as SVGs, useful for documentation and analysis. Find it on PyPI: https://pypi.org/project/pypgsvg/

portfolioSite: An opensource FastAPI fullstack website used to explain and avail my open source projects.https://www.blackburnsystems.com

Education

ITT Technical Institute

●A.S. Computer Networking Systems Technology 1999 – 2001 | Miami, FL

● Lifelong self-directed learner in architecture, containerization, and modern Python/C.

● CompTIA Network+ Certification (2006)

Hobbies

- **Personal Projects:** Developed IoT publish/subscribe clients in C for microcontrollers and PLCs, managed via a Python FastAPI backend.
- **3D Design & Prototyping:** Experienced in 3D CAD modeling using Google Sketchup and practical desktop CNC prototyping.
- **Mechanical & Fabrication Skills:** Proficient in Diesel mechanics, welding, and real-time system monitoring.
- **Learning Approach:** Dedicated to a cross-disciplinary, problem-solving approach to learning and applied experimentation.