Daniel Blackburn

danielb@blackburnsystems.com | (305) 773-3923

Experienced software engineer with 20+ years of Python, SQL full-stack development. Proven track record of designing, testing, building, 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 approach challenges with curiosity, pragmatism, and empathy, focusing on long-term maintainability and making life easier for future development.

Experience

Holmes Corporation- *Software Engineer/Architect Full Stack 2007 May 2025 | Remote*

- Developed DDD and maintained a secure Identity and Access Management (IAM) Role-Based Access Control (RBAC) system using Python, PostgreSQL, mod_proxy, and authTKT, serving over 200,000 users and 500,000 accounts.
- Architected secure, modular authentication flows, custom Single Sign-On (SSO), and API integrations for federated, multi-tenant access, enhancing self-support for advanced partners.
- Led the refactoring of the application stack for multilingual (French, Spanish, Chinese, Arabic) and Right-to-Left (RTL) support with modern, responsive JavaScript. Implemented "through-the-web" (TTW) editing for personalized outage messages, contributing to over 98% uptime YOY.
- Built diagnostic, polyglot stack, and tracing tools across a multi-node Azure cloud cluster to reduce support workload and enhance system transparency.
- Designed, implemented, and maintained normalized PostgreSQL schemas to streamline business logic and reduce codebase complexity. Achieved logarithmic performance improvement using performance metric-based Common Table Expression (CTE) recursive queries and triggers.
- Implemented enterprise web administration toolsets, including highly logged impersonation capabilities, for debugging customer experiences.

Bayview Financial LLC - *Software Engineer Coral Gables, FL | 2007 - 2008*

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

University of Miami Medical School - *Software Specialist II | Miami, FL | 2002 - 2007*

- Automated MySQL-Active Directory synchronization for streamlined access provisioning.

- Reverse-engineered a legacy C-based automation system to enable internal modifications and updates.
- Developed 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, GitHub Actions, Build Triggers, Google Cloud Console, DNS, Apache, SSL, SSO
- **Testing & QA:** TDD, CI/CD, Unit Testing, Selenium, 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 (refactoring, automation, validation, R&D), 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 | Miami, FL

Hobbies

- **Personal Projects:** IOT ESP32, UART, SPI real time device control and monitoring 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, and 3D printing.

- **Mechanical & Fabrication Skills:** Proficient in Diesel mechanics, welding, and real-time system monitoring.
- **Learning Approach:**Lifelong self-directed learner in architecture, containerization, and modern Python/C.