

DAVID BUSH

New Zealand-based Senior Software Engineer | Backend & Full-Stack Development
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PROFILE

Senior Software Engineer with **15+ years of experience** designing, architecting and scaling high-impact systems for global brands including **YouTube, Nokia and the University of Oxford**. Specialising in **Python, JavaScript/TypeScript and AWS** development, with deep expertise in event-driven, serverless and N-tier cloud architectures. Proven track record in modernising complex legacy systems, implementing AI/LLM-powered functionality and **leading cross-functional teams** to deliver innovative, maintainable solutions that directly drive business value. Seeking to leverage strong technical leadership and architecture skills in challenging projects across the ANZ market.

SKILLS

Languages	<i>Python (Expert), JavaScript, TypeScript, Elixir, Ruby, SQL</i>
Cloud & DevOps	<i>AWS (Lambda, DynamoDB, API Gateway, SQS, ECS, Kinesis), Azure Serverless, Docker, Kubernetes, Terraform, CI/CD (Jenkins, CodePipeline)</i>
Frameworks	<i>Django, FastAPI, Flask, React, ExpressJS, VueJS, NestJS, Phoenix, Ruby on Rails</i>
Databases	<i>PostgreSQL, MySQL, DynamoDB, Apache Cassandra, Redis, Elasticsearch</i>
Methodologies	<i>Agile (Scrum/Kanban), Event-Driven Architecture (EDA), Microservices, Test-Driven Development (TDD), Prompt Engineering</i>

CAREER HISTORY

Senior Software Engineer | Smashing Pixels | Remote | Dec 2023 - Aug 2025

- Directed technical strategy for two **complex, business-critical** web applications, ensuring **high availability and 100% uptime** across multiple international tourism campaigns.
- Developed an **AI-powered travel itinerary platform** integrating ChatGPT with a custom WordPress backend, utilising prompt engineering for context-aware conversation and automated itinerary generation.
- Engineered a **TypeScript relay service on Azure Serverless** specifically to **bypass host-imposed PHP thread timeout limits**, thereby enabling **real-time streaming of LLM responses** and efficient management of itinerary lifecycles.
- Built a secure, full-stack competition platform managing **\$100k+ in tourism incentives** across five U.S. destinations, covering authentication, booking validation and analytics dashboards.
- Delivered a robust reporting and storage pipeline providing **real-time access to travel data** with strict integrity guarantees, directly influencing campaign strategy and ROI measurement.

Senior Software Engineer | Liven | Remote | May 2020 - Dec 2022

- Led the critical migration of an unsupported PostgreSQL version**, successfully mitigating the risk of total data loss and safeguarding the company from imminent service shutdown in the event of an AWS failure.
- Spearheaded the design and deployment of a scalable web application leveraging AWS, Elixir and Phoenix** to facilitate **front-of-house staff customer payment processing**, serving high-profile clients like Ben & Jerry's.
- Oversaw the full software development lifecycle** (from concept to deployment) of a new, **scalable** Python-based RESTful API (FastAPI and PostgreSQL) for a social network service, leading a team to build it from scratch amidst evolving requirements
- Architected and delivered a resilient **authentication service** using TypeScript, NestJS, AWS Lambda, API Gateway and DynamoDB, centralising user access across all platforms.

- **Drove the long-term strategic modernisation of a legacy Django codebase**, including an iterative **migration from Python 2 to 3**, delivering significant performance enhancements and improving maintainability through collaboration on feature delivery and maintenance.
- Mentored the Data team on best practices for Python, Django and REST API integration, driving consistent, high-quality development and **championing engineering culture improvements** that increased team efficiency and release reliability.
- Contributed to the establishment of a robust, language-independent **Playwright-based end-to-end testing framework**, significantly improving release confidence and enabling future system decoupling.

Senior DevOps Engineer | MYOB | Christchurch & Remote | Mar 2019 - Jan 2020

- **Architected and implemented a scalable, fault-tolerant RESTful service** utilising AWS ECS, Kubernetes, CodePipeline and PostgreSQL to integrate multiple internal systems and tools.
- Led a small cross-functional team to **design and build a dynamic form builder**, significantly improving efficiency in internal departmental data capture and operational workflows.
- Collaborated effectively across complex corporate structures, managing scope, feature requests and sprint planning with **international stakeholders** to accelerate the feature release cadence.
- **Spearheaded process improvements** (including proactive project management and risk mitigation) that increased development speed, release quality and deployment timelines, **averting costly design errors** and mitigating scope creep.
- Mentored junior developers, empowering them to make informed technology evaluations and fostering a culture of **continuous improvement and technical confidence** within the team.

Senior Software Engineer | SMTP2GO | Christchurch & Remote | Feb 2017 - Aug 2018

- **Spearheaded a comprehensive modernisation initiative** that redefined engineering practices across the team, leading to increased efficiency, stability and delivery confidence.
- Drove the successful adoption of **containers, Application Performance Monitoring (APM), CI/CD pipelines, secret management and unit testing**, establishing a culture of continuous improvement in software delivery.
- Played a pivotal role in shaping architectural decisions that led to cost reduction and efficiency improvements, particularly around infrastructure and database performance.
- Instituted development best practices, including **formal postmortem reporting**, significantly reducing outage recovery times and minimizing the duration and impact of critical, high-severity incidents (SEV1+).
- **Sustained the ongoing refactoring and optimisation of a legacy codebase**, consistently reducing service footprint, mitigating security risks and tuning critical hot paths to improve service performance, which resulted in boosted customer satisfaction.
- Developed **RESTful services** for the Email Service Provider (ESP) and spearheaded an open-source initiative, developing libraries in multiple programming languages to enable broader service integration and enhance the company's ecosystem.

Contract Python Developer | University of Oxford, Oxford, UK | Jan 2016 - May 2016

- **Modernised a public-facing thesis storage application** at the Bodleian Library, enhancing both frontend and backend functionality using **Python, JavaScript, Ruby and Ruby on Rails**.
- Introduced **Continuous Integration (CI) tooling (Jenkins)** and standardised coding styles, resulting in **increased code maintainability** and release frequency with fewer production bugs.
- Refactored large portions of the codebase, simplifying complex areas to create more maintainable and flexible solutions, ensuring easier integration of future requirements.

- Improved requirements gathering processes to foster better collaboration between engineering teams and internal stakeholders.
- Mentored junior developers and contributed to knowledge sharing, improving cross-team collaboration and skill development.

Contract Python/Django Developer | Gizmag | Melbourne & Remote | Jun 2015 - Dec 2015

- **Achieved a ~60% reduction in page load times** by re-architecting several key systems, directly increasing user engagement and advertising revenue through faster, more responsive browsing.
- Enhanced the Python/Django news platform by introducing **per-user article recommendations** and implementing multi-level caching (using **Redis** and **Varnish**).
- **Engineered a comprehensive responsive image pipeline** that utilized pre-generated, device-optimized assets (formats and sizes) and **dynamically selected the optimal image** for delivery via compression and edge hosting (CDN).
- Introduced Elasticsearch for enhanced platform logging and complex search functionality. Optimised slow database queries to significantly boost overall platform performance.
- Elevated team capability by **mentoring** junior developers on Python/Django best practices and **leading the refactoring initiative** to ensure a highly maintainable and scalable codebase for future growth.

Contract Python Developer | Incopro, London, UK | Jul 2014 - Dec 2014

- **Designed and implemented a resilient, future-proof NoSQL schema using Apache Cassandra**, which supported the company's operations until its acquisition in 2021.
- Core member of an Agile team, responsible for building flagship content protection software from scratch.
- Developed high-performance Python data pipelines and implemented a custom Cassandra-Django integration for efficient, large-scale data processing.
- **Mentored junior developers** and coordinated complex workflows across international teams, ensuring timely delivery under tight deadlines and solving complex technical challenges.
- Delivered resilient, maintainable solutions in a high-pressure environment, demonstrating strong technical execution.

Early Career Summary | 2008 - 2014

- *Further experience as a Software Engineer in e-commerce, media and finance sectors. Details available upon request.*

EDUCATION

- **Malmesbury School, Wiltshire (Sep 1997 - May 2004)**
- **University of Wolverhampton (Sep 2004 - May 2008)**

INTERESTS

Non-fiction reading (technical subjects and history), **photography**, **mountain biking** and **international travel**.