

CALLAN BRYANT MEng

calbryant.uk · callan.bryant@gmail.com · Cambridgeshire, UK

Principal Cloud Architect at Hypervision Surgical, an AI-powered hyperspectral imaging company. Hands-on architect and engineer with 12 years building secure, traceable software and infrastructure for regulated healthcare: cloud platforms, GPU compute, device connectivity, edge systems and compliance. Took Cydar EV from prototype to around 100 hospitals in the US and EU.

CAREER HIGHLIGHTS

I design and build whole systems, from PKI and infrastructure-as-code to application code, and have led the teams that ship them.

HYPERVISION SURGICAL

PRINCIPAL CLOUD ARCHITECT

2026 to present

Owns Hypervision's cloud platform: secure, traceable data flows, observability and deployment, built for SaaS, partner integration and petabyte-scale ML training data.

Post-market surveillance cloud platform
Designed and built a Django/React platform on a Terraform-managed 7-account AWS organisation in 5 months. ECS, RDS, WAF and SAML SSO, ready for UK/US data residency and SaaS

Security monitoring and NHS assurance
Built an Elastic SIEM fed by CloudTrail, WAF and app logs; its data drove WAF rules. Wrote traceable security requirements for NHS and partner reviews ahead of deployment as a connected medical device

Secure surgical device connectivity
Delivered a PKI with hardware-rooted device identity and mTLS upload. On-device pseudonymisation and PACS integration to file captures against hospital patient records

CYDARMEDICAL

VP OF ENGINEERING

2025 to 2026

Technical strategy, architecture and product ownership; hands-on development alongside leading dev and QA teams of up to 10.

Immutable edge OS (buildroot)
Designed and delivered a buildroot-based, immutable Linux OS for hospital edge devices. Highly available and secure

Dev/QA process redesign
Introduced a Scrum process across dev and QA. Cut rework by ~30%

Automated regulatory release docs
Connected Jira, TestLodge and GitHub Actions APIs with Python to automate traceability of requirements, test evidence and security scan triage, and to compile regulatory release docs. Saved a week of work each month and cut the risk of human error

HEAD OF ENGINEERING

2022 to 2025

Led and grew a team of up to 9 engineers. Built ISO 27001, IEC 62304, ISO 14971 and ISO 13485 compliance into the SDLC.

Automatic Volume Assessment system
Led delivery of an AI-based aortic aneurysm volume assessment system, used at around 100 sites

CT follow-up transfer system
Architecture and project management for a batch system that automatically transfers follow-up CT scans. Transferred 10,000+ scans across 50 sites to support patient follow-up. Python, TypeScript

Team restructure and QA automation
Restructured dev and QA teams to increase collaboration. With test automation and requirements traceability, QA headcount went from 8 to 3, cutting cost significantly with no loss of quality or safety

PRINCIPAL ENGINEER

2017 to 2022

Design and development of the Cydar cloud and edge components that brought Cydar EV to the operating theatre; project and team lead.

In-theatre remote control
Co-ordinated research, UX, UI, hardware, compliance and embedded firmware for a LoRa RF USB remote. 10-year battery life. Deployed at 100 US/EU sites with zero issues. Embedded C, ATMega

Anatomy deformation adjustment
Led 8 engineers to deliver an anatomy adjustment tool needed for commercial viability. Indirectly led to around 90 more sites

Edge auto-update and process manager
Built an auto-update system for deploying and monitoring edge software in hospitals. Code audited by NCC Group. 100s of installs each with 100s of updates; 0 failures. Python, gRPC

Hospital SSO (SAML2)
Built a Python/Django SAML2 service provider for hospital SSO via Microsoft ADFS and Azure AD. Penetration tested by NCC Group. Won Cydar's first US customer

SENIOR ENGINEER

2014 to 2017

Brought the prototype Cydar system to market.

PACS DICOM / web gateway
Built an edge-deployed gateway to query and retrieve CT scans (DICOM) from hospital PACS. Concurrent, queued transfers with real-time progress. In use since 2017 in 80+ hospitals

Content-addressed object store
Built on S3 and Redis for low-latency, reliable data access. Intrinsic automatic de-duplication and integrity guarantees. Critical for Cydar's patient data and pipeline

Distributed GPU compute system
Cut 2D-3D image registration time from 50 s to 5 s, making it clinically usable. Low-latency work-distribution system using Redis

BROADCOM

SYSTEMS DESIGN ENGINEER

2013 to 2014

FPGA-based and PCB hardware design for video SoC validation and test systems.

FPGA cluster I/O multiplexing
Designed a source-synchronous clocking scheme that raised SoC core clock 4.5x, giving ~2x productivity and cutting cost

INDUSTRIAL PLACEMENT AND SUMMER INTERNSHIP

2010 to 2011 + 2012

Virtex-7 FPGA cluster bring-up with pattern checking HDL. Dev board design, stereoscopic camera add-on, automated testing system, lab and budget management.

Stereoscopic camera development add-on board
Designed 2 daughtercards for a dev kit to interface 2x CSI cameras with shared clock and auto-stereoscopic 3D display, before datasheets were published

SKILLS & TECHNOLOGIES

From embedded C to Python, Go and TypeScript; from PCB design to AWS Organizations. Focus on cloud infrastructure, security and compliance automation.

Programming languages	**Extensive**: Python, Go, TypeScript/JavaScript, Bash, Embedded C, HTML/CSS, OpenSCAD **Proficient**: SQL (PostgreSQL, SQLite), LaTeX, Typst **Familiar**: C/C++, Perl
Cloud & infrastructure	**Extensive**: AWS (Organizations, IAM Identity Center, ECS Fargate, ECR, RDS PostgreSQL, ELB, WAF, CloudTrail, CloudWatch, Kinesis Firehose, S3, KMS, Route 53, ACM, Secrets Manager, Lambda), Nix (flakes, NixOS, home-manager), Linux (Ubuntu, buildroot, NixOS, Fedora, RHEL), Docker/containers, Ansible, Yocto, nginx, Redis, Network administration & design, Terraform **Proficient**: ZFS, GCP/Azure **Familiar**: Kubernetes, FreeBSD
Security	**Extensive**: PKI (X.509, mTLS), GnuPG, Code signing (Authenticode, OpenPGP), WireGuard **Proficient**: SIEM (Elastic), SAML2 SSO, WebAuthn/passkeys, nftables/iptables **Familiar**: Microsoft Entra ID
Development	**Extensive**: Git, GitHub Actions/GitLab CI, Django, DICOM/PACS, Jira, AI-assisted development (Claude Code, opencode) **Proficient**: gRPC/WebSockets, React/Svelte, Jenkins, Agile (Scrum/Kanban), ISO 13485, IEC 62304, ISO 14971, ISO 27001
EDA/HDL/Hardware	**Extensive**: Fine-pitch soldering, 3D printing (FDM) **Proficient**: Ultra-low-power electronics, Electronic/electrical circuit design & troubleshooting, SMD rework, RF/LoRa **Familiar**: SystemVerilog, KiCad/LibrePCB

EDUCATION & QUALIFICATIONS

University of Leicester

Master of Engineering (Electrical and Electronic) with Industry
University of Leicester, First Class Honours — 2008 to 2013
Isolated, scalable battery management system with individual cell voltage and temperature readout. P/I-based current-mode 0-300A 2x16kW DC motor controller for Formula Student. Year in industry at Broadcom, mobile multimedia group.

Scrum Master Certification (2024, The Knowledge Academy)

Amateur radio licence (2021, RSGB, Foundation). Callsign M7NBD

A levels (2008, East Norfolk Sixth Form College, ACD(B)). Electronics, Physics, Maths, Computing (AS)

GCSEs (2006, Kirkley High School, AAABBBBBCCC)

HOBBIES & INTERESTS

I design and build things: electronics, software, woodwork and 3D printing. I blog my adventures on https://calbryant.uk/. In my spare time I also run, cycle and play badminton, and chair my local badminton club. I created and maintain 2 open-source projects: dstask (a task tracker) and dsnet (a VPN manager)