

Dave Dixon

Lead Software Engineer / Technical Lead

EMBEDDED & LOW-LEVEL · ENTERPRISE .NET · CLOUD & WEB · TEAM LEADERSHIP



ONLINE CV
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PROFILE

A software engineer of over twenty-five years who is equally at home in assembler on a bare board and in a modern TypeScript or .NET codebase running in the cloud. I have led teams, owned architecture and faced customers directly, frequently on the same project.

My first program ran on an Amstrad CPC464 when I was ten, and the curiosity that started it has never worn off. I am the person who explains the system to the customer, chairs the stand-up, and then goes and finds the root cause. I care about the qualities that decide whether software is genuinely good rather than merely finished: diagnosability, documentation, deployment, security and support cost. I use coding agents extensively, within spec-first, reviewable engineering workflows.

ENGINEERING PRACTICE

- **Agentic development.** I work fluently with AI coding agents, using them for implementation and refactoring as much as for review and test generation. The conventions and architectural rules they rely on are committed alongside the code, so that people and agents can both change it safely.
- **Spec-first.** A written design plan comes before the code, along with documented module boundaries and an enforced dependency direction. That keeps intent reviewable, and keeps the codebase legible to newcomers and tooling alike.
- **Delivery toolchain.** A Git-based workflow with CI/CD pipelines that build, test and package automatically. Compilation stays warning-free, gated against defect classes already seen. Crash capture and diagnostics are designed in from the start rather than bolted on afterwards.
- **Deliberate learning.** AWS certification gained in my own time, and a standing habit of taking new platforms apart in personal projects before they matter at work.

SELECTED STRENGTHS

Technical leadership Led development teams across the UK, Malaysia and offshore suppliers; Scrum Master for two teams; rated Exceeds Expectations in consecutive annual reviews.	Architecture & design Designed a multi-tenant partner API, a pluggable supplier-integration platform, and portfolio-wide software roadmaps at Raymarine.
Customer-facing engineering The development team's representative to Shell throughout a national loyalty-points rollout; previously the client contact for oil-rig simulator delivery in Texas and Mexico.	Deep diagnostics The engineer colleagues escalate hard-to-reproduce crashes to; builds the tooling and tests that turn "cannot reproduce" into a root cause.
Unusual breadth Payments and EFTPOS, fuel forecourt, convenience retail, marine electronics, aerospace sensors and oil & gas simulation.	Raises the floor Fixes classes of defect rather than instances, and leaves behind source control, installers, documentation and build gates that stop them returning.

TECHNICAL SKILLS

Languages	C#, C, C++, Delphi / Object Pascal, TypeScript, JavaScript, Java, Python, SQL, Assembler
Platforms & runtimes	.NET, Windows, Linux, Android, ThreadX, Nucleus+
Cloud & web	AWS — EC2, S3, Lambda, SQS · AWS Certified Cloud Practitioner; multi-tenant SaaS architecture, self-documenting APIs, Vite, modern browser APIs (Canvas, WebCodecs, Web Audio)
Data	SQL Server, MySQL, Firebird, schema design, migration and corruption forensics

Protocols & interfaces	Protocol and API design; HTTP / REST, WebSockets, SOAP, TCP/UDP, OAuth 2.0, XML / JSON / binary serialisation, RS-232 and serial, COM, CAN, NMEA 2000, IFSF, MIDI
Engineering practice	Agentic coding and AI-assisted review, spec-first development, Agile / Scrum, Git, CI/CD, UML, technical writing
Tools	Visual Studio, VS Code, RAD Studio / Delphi, Eclipse, Git

EXPERIENCE

Jan 2021 – Present
Southampton, UK

CURRENT

Senior Developer → Software Engineer III

PDI Technologies — formerly Orbis Tech Ltd, acquired by PDI in 2021

Global leader in enterprise software for convenience retail and petroleum wholesale.

- Represented the development team to **Shell** throughout a national loyalty-points programme, covering design reviews, UAT, escalations and deployment through to completed rollout across the estate.
- Averted a costly deployment error across **Rontec's** estate of 265+ filling stations by establishing that many sites ran forecourt controllers the team's preferred pump-activation service did not support, overturning the assumed architecture before commitment.
- Designed and built a **.NET 6 supplier-integration service** with a pluggable per-supplier link architecture for product catalogues, ordering and invoicing; the first supplier link shipped for an Australian convenience-retail chain.
- Designed the **multi-tenant model for a third-party integration API** that lets customers safely share a single service instance, and carried it through architectural review.
- Unblocked stalled application-server communications by identifying a commercial RPC SDK, then delivered the first phase to schedule for **Moto**, the UK's largest service-station operator.
- Brought **version control, an installer and a self-documenting API** to a codebase that had none, together with the documentation to support it.
- Introduced silent **call-stack capture** for point-of-sale access violations, turning previously undiagnosable field crashes into tractable, assignable defects.
- Eliminated a class of uninitialised-variable defects across the codebase with **build gates** preventing their return, and rebuilt a slow, unreliable Delphi development environment for the team.
- Coordinated the cross-team investigation into **Firebird database corruption**, correlating open support cases and site patterns to establish the true picture rather than treating each report in isolation.
- Scrum Master for the Kuala Lumpur and UK teams, and instrumental in integrating the UK point-of-sale team into PDI's global engineering organisation.

Jul 2012 – Dec 2020
Southampton, UK

Principal Embedded Engineer

Htec Ltd

Forecourt, POS and back-office systems for UK fuel and convenience retailers.

- Owned the integration of a **new outdoor payment terminal (OPT)** across the UK forecourt estate, notably for **Asda**, when the incumbent terminal reached end of life. Spent two weeks at the manufacturer in New Zealand working through their Java API, then designed an integration that minimised change to existing forecourt software while still exposing the new terminal's capabilities.
- Delivered **mobile payment integration for Shell, Esso and BP**, allowing motorists to pay for fuel from their smartphones.
- Led a team of software developers responsible for POS, back office, terminals and the wider fuel and c-store systems, taking on the people side of the role alongside the technical.

Jun 2007 – Jul 2012
Hampshire, UK

Software Architect & Team Leader

Raymarine

World leader in marine electronics, developing and manufacturing equipment for the marine markets.

- Established the common platforms, shared components and technology roadmaps used across the whole software portfolio, predominantly C and C++ on ThreadX and Linux.
- Authored and agreed software specifications in UML with department leads, translating fluently between engineering, product and commercial audiences.
- Led international development teams, several new to the product domain, delivering flagship products on time and to budget while holding the line on quality standards.

EARLIER CAREER

Jun 2005 – Jun 2007

DataTrack · Software Engineer

Reverse-engineered and modernised legacy Windows data-aware applications onto newer SQL technologies, designing new databases and client software for performance and scalability.

Aug 2003 – Jun 2005

Drilling Systems · Software Engineer

Replicated drilling human-machine interfaces for training simulators serving high-profile oil rigs worldwide. Acted as the point of contact for clients and travelled regularly to support senior drilling instructors on site in Texas and Mexico.

May 2001 – Jul 2003

Thales e-Transactions · Software Team Lead

Led the team producing EFTPOS terminals and PIN-entry devices for the retail sector: board bring-up, low-level drivers in assembler and C, and application code within a secure, certified environment.

Jul 2000 – May 2001

AB Precision · Software Engineer

Developed embedded device and Windows client software interfacing with sensory systems in the aerospace domain, including wind measurement equipment feeding data to airport control towers.

PERSONAL PROJECT

midi2vidi midi2vidi.com

Typescript · vite · WebCodecs · Web Audio

A browser-based MIDI visualiser: drop in a MIDI file and it renders an animated 88-key piano with falling notes, per-track colours and particle effects, then exports the performance as an MP4. Every stage runs client-side, from parsing and rendering to SoundFont audio synthesis, video encoding and muxing, so nothing is uploaded and there is no backend to run. Strictly layered TypeScript under a one-directional dependency rule, with chroma-key-safe output for compositing. Designed and built with AI coding agents as a core part of the workflow.

EDUCATION & CERTIFICATION

AWS Certified Cloud Practitioner

Amazon Web Services, achieved in own time

Diploma, Artificial Intelligence & Computer Science

University of Birmingham

Postgraduate Diploma, Software Development

The Open University

Interests Classical piano, with recordings at youtube.com/user/DaveDixon1 · snowboarding · black belt in kickboxing · a long-standing habit of reading well beyond software, mostly mathematics and the sciences.

References
Available on request