

Joseph James Smyth

Senior Full Stack Software Engineer

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PROFILE

Senior full stack engineer with 15+ years of commercial PHP experience (PHP 5 to 8.4), currently building and modernising a SaaS sustainability reporting platform with Laravel and React while retiring its legacy Zend Framework application. Background spans Symfony/Laravel, RESTful APIs, MySQL/MariaDB, React Native, automated testing, CI/CD pipelines and AWS, along with leading project lifecycles and mentoring engineers. Works AI-first every day, building the project context and custom skills that let agentic tools such as Claude Code follow team process, to deliver faster without lowering standards. Committed to SOLID, PSR-12, OWASP and test-driven practice.

AI-ASSISTED ENGINEERING

- **Daily agentic development:** Use Claude Code throughout delivery on production Laravel, React and legacy Zend codebases, covering planning, implementation, debugging, data investigations, testing and review, while keeping human ownership of architecture, security and final code quality.
- **Context engineering:** Write a CLAUDE.md file for each repository, linked to a shared project spec that encodes the team's Jira ticket, branching and Bitbucket PR workflow, with guardrails such as never merging to protected branches, so AI agents work within established process.
- **Custom agent skills:** Building reusable skills that automate the development workflow: ticket planning from Jira descriptions and commit history, code review against PSR-12 and OWASP, performance review, PR creation and ticket updates.
- **Prompt-driven builds:** Deliver greenfield prototypes through structured prompt sequences, for example a FastAPI and React emissions dashboard with secure login and unit tests. Also use Replit Agent for rapid prototyping.

AREAS OF EXPERTISE

Laravel/Symfony, React & React Native • Legacy System Modernisation • API Design & Integration • AI-Assisted Engineering • Performance Optimisation • Database Design & Tuning • Predictive Modelling & Analysis • Data Accuracy & Integrity • Testing & Quality (TDD) • Project Lifecycle Management • Team Leadership & Mentoring • Financial Algorithm Development

PROFESSIONAL EXPERIENCE

Senior Software Engineer

Jan 2025 – Present

SustainIQ Ltd • Belfast (Hybrid)

Full stack development on a SaaS sustainability and ESG reporting platform. The platform has a dual-stack architecture: a Laravel 13 / PHP 8.4 API (Horizon queues, Redis, MariaDB, Docker) alongside a legacy Zend Framework 1 / PHP 7.1 application that is being phased out. Also developing a companion Laravel/React GHG emissions reporting product.

- Contributing to a React frontend rebuild of the platform's navigation, dashboards and reporting pages (energy, water, waste, transport). The new pages run solely on the Laravel API and GHG summary data, which removes their dependence on the legacy database.
- Investigated and resolved GHG emissions data accuracy issues across queued summary pipelines. This included a model-observer dispatch bug that was silently dropping summary jobs, orphaned records inflating reported figures, and unbounded accumulation in unit-conversion columns. Also moved transport calculations to the 2025 DESNZ conversion factors.
- Built a synchronisation service to reconcile energy meter data between the legacy application and the Laravel API, keeping both systems consistent during the migration.
- Delivered a Target Management module (CRUD, complex validation and reporting), KPI actuals and targets Excel exports, multi-file certificate uploads, and robust CSV import handling for water and energy data.
- On the companion GHG reporting product, rewrote GHG summary endpoints to eliminate N+1 queries, built a Targets Management feature with per-target charts, and rebuilt the emissions-by-scope and emissions-by-type charts with stacked, grouped and line views. Also contributed to multi-tenancy, security and CI test-suite planning.
- Carried out predictive modelling and data analysis in Python on the platform's sustainability and emissions data.

- Work within CI/CD pipelines that automate testing and deployment through staging to production. Improved team tooling with a cross-platform (macOS/Windows) database import script and Playwright end-to-end testing.

Lead Software Engineer

Mar 2022 – Nov 2024

Pulse Sales Solutions Ltd • Belfast

Led project lifecycles from planning through execution and delivery, meeting milestones within budget. Worked closely with UX and UI designers to create intuitive interfaces, and managed resources across cross-functional teams. Hired, onboarded and mentored new engineers.

- Led the creation of a working prototype that evolved into a market-ready software product. The product secured external investment and was adopted by customers.
- Built scalable Symfony and Doctrine ORM applications hosted on AWS EC2, and set up CI/CD pipelines automating build, test and deployment for faster, more reliable releases.
- Improved application performance and user satisfaction by diagnosing and resolving complex technical issues.

Senior Software Engineer

Mar 2016 – Mar 2022

Pulse Sales Solutions Ltd • Belfast

Wrote clean, modular code to industry standards. Monitored application performance metrics and validated improvements through performance testing. Automated PHPUnit testing within CI/CD pipelines and deployed applications to AWS EC2.

- Designed and developed Symfony APIs for data exchange between server and client applications.
- Improved API performance and security through caching, rate limiting and input validation.

Software Engineer

Oct 2014 – Mar 2016

Zesty • Belfast

Developed and maintained mortgage and loan calculators for a major UK and Ireland bank. Worked with banking professionals to implement complex financial algorithms for repayments and interest rates, ensuring accuracy and regulatory compliance. Secured the calculators with encryption, authentication and access controls aligned with banking industry standards.

Software Engineer

Oct 2011 – Oct 2014

Seopa Ltd • Belfast

Built and maintained integrations with insurance providers' APIs to retrieve real-time car, home and health insurance quotes for a comparison platform. Made the integrations fault-tolerant through rate-limit monitoring and retry handling, and carried out security audits and vulnerability assessments.

EARLIER EXPERIENCE

- **Junior Software Engineer, Acorn IT Solutions Ltd, Maghera (Oct 2010 – Oct 2011):** Built custom Visual Basic plugins and forms extending Sage accountancy software, working directly with clients on their requirements.
- **Junior Software Engineer, Blitz Web Development Ltd, Portstewart.**

PROJECTS

- **Team management app (personal project):** A Laravel 13 API with a React Native (Expo) mobile app, covering player management, trial scoring, season planning and squad selection.

TECHNICAL SKILLS

Languages & Front End: PHP (5–8.4), Python, JavaScript, TypeScript, SQL, HTML, CSS, Tailwind CSS, Bootstrap

AI Tooling: Claude Code, agent skills, CLAUDE.md context engineering, prompt-driven development, Replit Agent

Frameworks: Laravel, Symfony, Zend Framework, React, React Native (Expo), Vue.js, Node.js / Express, FastAPI

Data: MySQL, MariaDB, PostgreSQL, MSSQL, MongoDB, Redis, Doctrine ORM, Eloquent

Infrastructure: AWS (EC2), CI/CD pipelines, Docker, Laravel Sail, Lando, Laravel Horizon, RabbitMQ / Symfony Messenger, Git, Bitbucket, Jira

Quality & Security: PHPUnit, Playwright, TDD, DDD, PSR-12, SOLID, OWASP, OAuth2, JWT, RESTful API design

EDUCATION

PgDip Business & Information Innovation, Ulster University, Coleraine

2007 – 2008

BSc Business with Computing (2:1), Ulster University, Coleraine

2004 – 2007