Richard Mackey
Software Developer

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https://richard-mackey-portfolio.onrender.com   Github   LinkedIn

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Professional summary
Full-stack developer with hands-on experience building web applications using React frontends, REST APIs, and both SQL and NoSQL databases. Implemented CI/CD pipelines, comprehensive testing strategies, and JWT authentication across multiple production deployments. Background as a PhD chemist and Head of Chemistry provides strong analytical problem-solving skills and the ability to communicate technical concepts clearly. Seeking a software engineering role within an agile team to contribute to scalable applications whilst developing expertise in cloud platforms and container orchestration.

Technical skills:
Languages: JavaScript, Java, Python, HTML/CSS, SQL
Frameworks/Libraries: React, Spring Boot, Express, Bootstrap
Tools: Git, PostgreSQL, MongoDB, JWT, REST APIs, GitHub Actions, CI/CD
Testing: JUnit 5, Mockito, Integration Testing, Unit Testing, Test-Driven Development (TDD)

Projects overview: all projects can be viewed on GitHub and my portfolio website

Poise PMS: Full-stack project management system built with Spring Boot, JDBC, PostgreSQL, and Thymeleaf. Evolved from console application to web-based platform supporting concurrent users. Implemented comprehensive testing with JUnit 5 and Mockito, integrated CI/CD pipeline with GitHub Actions ensuring tests pass before deployment to Render. Primary challenges: refactoring to separate business logic from presentation layer and implementing professional testing practices.

iTunes search web app: Full-stack application integrating iTunes Search API. Built React frontend with localStorage-based favourites and Express.js backend with JWT-secured REST endpoints. Implemented responsive filtering using Bootstrap - collapsible sidebar for desktop, dropdown for mobile. Primary challenges: iTunes API returned inconsistent media type data requiring client-side parsing and filtering logic, and designing JWT security for stateless favourites without user authentication system.

Event planner: Event management application using React with Context API for centralized state and localStorage for data persistence. Built multi-page interface with React Router (list, create, edit, detail views) and complex forms using Formik with regex-based email/password validation and date/time constraints. Primary challenges: synchronizing state across Context API, localStorage, and form-level state without backend, and implementing professional form validation patterns for client-side CRUD operations.

Raspberry Pi: In addition to my coursework, some personal projects include Raspberry Pi sensor systems and LED displays with SSH-based remote management.

HyperionDev May 2025 - present: Full Stack Web and Software Engineering Course
- Completed full-stack development bootcamp with hands-on projects
- Built responsive web applications using Java, React, Spring Boot, and Express
- Implemented JWT authentication, RESTful APIs, and database integration
- Practiced Git workflows and code documentation standards

Full time science teacher September 2011 - May 2025
Collaborated with departmental teams of 10+, updating curricula and resources for 1,000+ students annually. Improved exam outcomes across all ability ranges whilst developing strong communication skills with students, parents and colleagues.

Education

PhD in Chemistry, University of Liverpool September 2007-January 2011
Researching layered, inorganic compounds and their applications in catalysing organic chemical reactions.