Richard Waters

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👨‍💻 Profile

Software developer with a First-Class Honours degree in Computer Science and 10+ years of experience across full-stack development, AI-driven applications, and cybersecurity. I've collaborated with OpenAI developers and worked with some very well known retail brands. I have also built innovative projects that integrate AI and cybersecurity techniques.

My philosophy

> **"The code is not the problem — the teaching is the problem."**

If you know code, you can code in anything. With this in mind, I believe we can adapt to any programming language or environment, fix issues by reading the machine's feedback, and constantly seek new challenges. I am currently focusing on penetration testing and cloud security certifications and building innovative projects.

🛠️ Core Technical Skills

- ***Languages:** Python, JavaScript, PHP, Java, Kotlin, C#, C++, Go, Rust
- ***Frontend:** React, React Native, Next.js, Tailwind CSS, CSS3, HTML5
- ***Backend:** Node.js, Laravel, .NET Core, Express.js, Python (Flask, Django)
- ***AI & Machine Learning:** TensorFlow, OpenCV, scikit-learn, Hugging Face, Pandas, NumPy

- *__Testing & Security Tools:__* OWASP ZAP, Burp Suite, Jest, Mocha, Cypress, Postman, custom penetration testing scripts
- *__CI/CD & DevOps:__* GitHub Actions, Docker, Render, Vercel, Azure DevOps Pipelines, Kubernetes, BitBucket
- *__Databases:__* MongoDB, MySQL, PostgreSQL, Firebase, phpmyadmin, pgAdmin4, Prisma, QuickGraph and Neo4j for .NET
- *__Platforms & CMS:__* Shopify, WordPress, Custom CMS development
- *__Cloud:__* AWS, Microsoft Azure, Render, Google Cloud

🚀 Projects

LumaScope

- *AI + Healthcare | Next.js, Python, TensorFlow, OpenCV, Render*

Developed a web application that analyzes blood sample images for Leukemia detection.

The AI model retrains dynamically with each new image upload, improving diagnostic accuracy. Integrated image processing algorithms with custom machine learning pipelines.

PassSmash

- *Cybersecurity | Next.js, Python*

A password cracking simulation tool designed to demonstrate password vulnerabilities by performing real-time brute-force and dictionary attacks.

Custom AI & Algorithm Development

- Built computer vision and pattern recognition AI models using TensorFlow and OpenCV.
- Developed cryptographic and hash cracking algorithms for penetration testing exercises.
- Created reinforcement learning scripts to optimise automation and code generation workflows.

💼 Work Experience

Senior Software Developer | Club L London | Manchester | 2022 – 2024

- Engineered scalable backend systems for Shopify data synchronisation using Node.js and MongoDB.

- Developed asynchronous job processing pipelines to optimise order fulfilment during peak sales periods.

- Built and maintained custom API integrations for payment gateways, shipping providers, and third-party services.

- Established CI/CD pipelines using GitHub Actions and Docker to automate testing, build, and deployment workflows.

- Monitored system performance and implemented security best practices to safeguard customer data.

- Collaborated with frontend developers, designers, and warehouse teams for seamless end-to-end delivery.

Cybersecurity Engineer | ShadowFox Security | Remote | 2020 – 2022

- Designed and implemented penetration testing tools and dashboards for a boutique cybersecurity consultancy.

- Automated vulnerability scanning using OWASP ZAP, Burp Suite, and custom Python scripts.

- Led red team simulations including phishing, social engineering, and network breach exercises.

- Built a React + Flask educational platform teaching OWASP Top 10 security risks via gamified labs.

- Produced detailed client reports with prioritised remediation plans.

Software Developer | Liverpool Hope University | Liverpool | 2020

- Developed a streamlined budget request and grant application form system using PHP and CodeIgniter, along with simple HTML front-end.

- The system allowed users to submit requests, track the progress of their submissions, and receive final feedback from administrators.

- Prioritised simplicity and usability to ensure ease of access for non-technical users.

- Project was personally commissioned by the Head of Computer Science shortly after graduation, reflecting strong trust and professional relationships built during studies.

Frontend Developer | Velstar | Liverpool | 2018 – 2020

- Delivered custom Shopify themes for major retail brands including French Connection, Swan, and Castore.

- Developed customer-facing apps for dynamic QR codes and discount functionalities.

- Worked closely with design and marketing teams to ensure brand-consistent, responsive experiences.

Full-Stack Developer | Tornado | Liverpool | 2015 – 2018

- Created bespoke WordPress themes and plugins for charities using PHP.

- Built property management CRM systems for local councils, automating rent payments and maintenance requests.

- Developed intuitive admin interfaces enabling non-technical users to manage data efficiently.

🎓 Education & Certifications

- ***BSc (Hons) Computer Science** – First Class Honours, Liverpool Hope University

- ***Ongoing:** Microsoft Azure Fundamentals, CompTIA Security+ (Cybersecurity certification courses in progress)

✨ Extras

- Open source contributor to security tooling projects.

- Passionate about combining AI and cybersecurity to build innovative solutions.

- Always learning and sharing knowledge through code reviews, workshops, and community talks.