John Dunning

Lead Software Engineer / Project Manager

Security Clearance: SC (Active)

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Professional Profile

Research-focused software engineering leader with extensive experience delivering advanced AI, automation, and cloud-based systems within high-assurance environments. Skilled at leading research and development projects, integrating AI frameworks into secure architectures, and bridging the gap between conceptual innovation and practical deployment. Recognized for turning around complex projects and advancing the adoption of AI and LLM technologies within enterprise and defence contexts.

Key Skills

- AI & Machine Learning: Local LLM fine-tuning, LangChain4j, agentic AI, guardrails, embeddings, retrieval-augmented generation (RAG), Python, PyTorch, PocketFlow
- Built local Agentic AI products for document management
- Java Ecosystem: Spring Boot 3, Maven, Drools, LangChain4j, microservices
- Cloud & DevOps: AWS (Lambda, DynamoDB, SAM), Docker, CI/CD, Git
- Front End: JavaScript, React, React Native, Redux, Redux Sagas
- Backend: Java, Spring Boot, Microservices, Kafka
- Platforms: AWS
- Leadership & Delivery: Research project leadership, technical mentoring, stakeholder engagement
- Architecture & Integration: REST APIs, event-driven systems, distributed data pipelines

Recent AI and Emerging Technology Work (2024–2025)

- Led internal AI research projects at Northrop Grumman, focused on fine-tuning and deploying local LLMs for secure, offline use.
- Integrated LangChain4j with Drools to create explainable, rule-based decision layers for AI workflows.
- Developed agentic AI and guardrails frameworks ensuring compliance, accountability, and predictable model outputs.
- Delivered internal presentations and demonstrations on AI integration, guardrails, and ethical AI design.

- Rescued and delivered a failing research project, transforming it into a success story later demonstrated to the Deputy Defence Minister.

Professional Experience

Northrop Grumman UK Ltd | Mission Systems

Lead Software Engineer / Project Manager (2022 – Present)

- Led R&D initiatives combining AI, cyber, and cloud technologies.
- Directed software teams developing next-generation architectures in secure environments.
- Designed scalable Spring Boot and AWS-based solutions aligned with modern DevSecOps practices.
- Mentored engineers on advanced AI, AWS, Java and Python integration techniques.
- Produced and delivered technical briefings and demonstrations for senior stakeholders.
- Worked within teams to develop highly scalable, secure systems.
- Managed an IRAD that was presented to the Deputy Defence Minister with good feedback

Security Experience

RAF LITS, IBM Stevenage, IBM Basingstoke

Consultant

- C and Oracle development to develop the core software
- Moved on to device driver development
- Transferred internally on to Secure OS Design and upgrades for AIX

MOD Endsleigh, Bath

Consultant

- Informix developer for MOD systems
- Designed and developed systems
- Provided internal training

PSA, Leeds

Consultant

- Designed and developed the Billing and Order Handling System for the PSA so facilitate privatisation
- Ran a team of people to staff and develop the solution
- Visited military bases throughout the UK to analyse the problems and requirements
- Chaired meetings with senior Army and RAF staff
- Presented solutions to the Undersecretary of State

HMRC, Telford

Consultant

- Worked on the Local Action Notice system
- Designed and developed software solutions and improvements

Skills421 Training and Consultancy

Customers included

YODEL

Full Stack Developer (Sep 2021 – Mar 2023)

- Developed screens for hand-held devices using JavaScript and React Native.
- Developed office computer applications using JavaScript, React, Redux, and Redux Sagas.
- Built backend systems using Spring Boot, Kafka, Kafka Streams, MongoDB, Informix SQL, Elastic Search, and Kibana.

Corporate and Private training (Aug 2019 – Sep 2021)

- Developed and delivered technical training courses published on Udemy covering Java, JavaScript, and Python.
- Researched AWS and technical topics for EAL, providing comprehensive articles and training materials.
- Joined the OpenAI beta program, developing AI systems in JavaScript, Java, and Python.
- Built small-scale applications for clients using JavaScript, React, and Redux.

LEVEL GLOBAL

Drools Architect (Mar 2018 – Aug 2019)

- Designed and developed tooling to migrate Oracle OPM projects to a Drools-based framework.
- Deployed the new Drools RPA System to AWS, enhancing automation and performance.

SWINTON INSURANCE

Drools Architect (June 2017 – Mar 2018)

- Designed a complete rules architecture to enhance the insurance quotation and claims systems.
- Replaced legacy spreadsheet-based rules with a Drools-driven system and recruited the implementation team.

ENTERPRISE ARCHITECTS

Drools Architect (Oct 2016 – June 2017)

- Built a POC and delivered a Drools-driven rules system for the Charity Commission Phase I project.
- Developed using Java 8, Drools 6, KieJars, AWS, and integrated with LifeRay and MuleSoft.
- Created a JavaFX-based log analyzer for Drools logs showing rules execution in user-friendly format.

DISCOVER

Drools Architect (Mar 2015 – Aug 2016)

- Designed and delivered a rules-driven system enabling Discover to comply with EU regulations.
- Developed using Java, Spring, Hibernate, Oracle, Camel, and Drools BRMS, achieving near-zero defects post-launch.

SCOTTISH GOVERNMENT

BRMS/BPM Developer Specialist (Sep 2014 – Mar 2015)

- Developed business rules, web services, and UI components for a major government project.
- Worked with Red Hat Consultants to deliver complex rules using Drools BRMS and BPMN under tight deadlines.

ATOS

Drools Lead (Feb 2014 – July 2014)

- Led Drools development for a transport sector project using complex event processing and EIP patterns.
- Implemented JBoss Drools, Apache Camel, CXF, RESTful Web Services, FitNesse, and explored PaaS with JBoss OpenShift.

Education & Certifications

- AWS Certified Cloud Practitioner (CLF-C01)
- Ongoing training in AI, LangChain4j, and LLM systems integration.
- Java certified