

PERSONAL DETAILS

Name **David Hay**

Qualifications BSc (Hons) Computer Science 2.1, University of Edinburgh

Coursera/EPFL	Functional Programming Principles in Scala (100% with Distinction) Principles of Reactive Programming (with Scala) (100% with Distinction)
MongoDB University	MongoDB Certified Developer M101J: MongoDB for Java Developers M101JS: MongoDB for Node.js Developers
Spring Source Certified	Certified Professional – Spring Framework
Sun Certified	Java Programmer (1.2, 1.4 & 5.0) Web Component Developer (Servlets and JSPs etc.) Business Component Developer (EJBs etc.) Web Services Developer (SOAP, REST, JAX-WS etc.)
IBM Certified	XML Developer UML and Object Oriented Analysis/Design
Coursera/RICE	An introduction to Interactive Programming in Python
Microsoft Specialist	Programming in HTML5 with JavaScript and CSS3
SmartBear	<input type="checkbox"/> SoapUI Pro Certification

Recent Taught Courses

Escalate Software ☐ [Stairway to Scala \(Advanced\)](#) - December 2014

PROFILE

A professionally qualified and committed individual with 20 years software development experience with top UK companies. Core strengths are the design and development of Java and Scala based Web Applications with using SQL/NoSQL databases with support from the Spring and Play Frameworks and. Always keen to learn new technologies and techniques to improve code quality and developer productivity.

SKILLS SUMMARY

• Software Development

Scala	3 yrs	Scala, Play Framework, ScalaTest, Specs2, Slick, Akka, Reactive Programming Functional Programming Principles in Scala Principles of Reactive Programming Stairway to Scala (Advanced)
	6 months of commercial experience	
Java	19 yrs	Generics, AOP/AspectJ, threads/concurrency, JMX, Quartz, Java 7, Java 8
Spring	10 yrs	Spring 4, Dependency Injection, Spring Data (JPA, Mongo, REST), Spring Boot, Spring Java Config, Spring MVC, Spring Web Flow, Spring AOP Spring @RestController, JAX-2.0, Jersey, Restful APIs, HATEAOS, JsonPath
REST		
Web Services	10 yrs	SOAP, WSDL, Apache Axis2, JAX-WS, Spring WS, Apache CXF REST, JAX-RS, RESTful APIs, HATEOAS
Web	17 yrs	HTML5, JavaScript, CSS/CSS3, Ajax, JQuery/JQueryUI, JSON/JSONP, WebSockets, AngularJS, CORS, Bootstrap 3, Jackson Familiar also with Node.js/Express (MEAN Stack)
NoSQL	1 yr	Certified MongoDB Developer (533-931-067), neo4j MongoDB for Java Developers , MongoDB for Node.js Developers ,
Messaging	4 yrs	JMS, Camel, ActiveMQ, Spring Integration, EAI/EIP, RabbitMQ (AMQP)

J2EE/JEE	15 yrs	EJB, JNDI, Servlets, WebSphere, Tomcat, JavaMail, JBoss, Jetty
Testing		JUnit, TestNG, JMock, EasyMock, Mockito, SoapUI, Spring MockMVC, Selenium WebDriver
BDD		Cucumber (cucumber-jvm), JBehave, Gherkin
Web Frameworks	9 yrs	Struts/Struts2, Spring MVC, Tiles, Velocity, Sitemesh, JSP, JSTL, Thymeleaf
XML	15 yrs	XPath, DOM, SAX, XML Schema, DTD, JAXB, XSLT, XQuery
Database Tools	20 yrs	JDBC, SQL, Stored Procedures, Hibernate, JPA, Spring Data
SQL Databases		Oracle, SQL Server, MySQL, PostgreSQL
Unix	20 yrs	Shell Programming ksh/csh, C, LDAP, sed/awk
Security	3yrs	Spring Security (for web apps, SOAP and REST), Kerberos, OAuth 2.0
Caching		EHCache, JCache, Spring Cache Abstraction
Other Languages	2yrs	Groovy, Python, Ruby
Tools		Eclipse, NetBeans, Maven, Ant, Subversion, Git, Hudson/Jenkins, Gradle, JIRA, Confluence, GitHub, Bitbucket

- **Software Design** – both small and large scale software design using Design Patterns
- **Modelling** – both Data Modelling for databases and UML for object based systems
- **Technical Analyst** – requirements analysis, scoping, proof-of-concept, options documents
- **Team Leading** – coaching, motivating, planning, reviewing, system design

CAREER SUMMARY

2015 - 16	Cisco – Service Provider Video Solutions (Custom Engineering) <i>Contract</i>
2015 - 15	Valuation Office Agency (child agency of HMRC) <i>Contract</i>
2014 – 14	Accenture <i>Contract</i>
2013 – 14	Prudential PLC <i>Contract</i>
2011 – 13	Oxford University Press <i>Contract</i>
2011	Yell Group <i>Contract</i>
2010	The Automobile Association <i>Contract</i>
2009 – 10	Allianz Insurance PLC <i>Contract</i>
2008 – 09	Virgin Media <i>Contract</i>
2008	Allianz Insurance PLC <i>Contract</i>
2007 – 08	Fujitsu Services Ltd <i>Contract</i>
2006	Anite Public Services Ltd <i>Contract</i>
2006	LogicaCMG PLC <i>Contract</i>
2005	Prudential PLC <i>Contract</i>
2003 – 05	Sun Microsystems UK Ltd <i>Contract</i>
2000 – 02	Prudential PLC <i>Contract</i>
1997 – 00	Sun Microsystems UK Ltd
1993 – 97	Logica UK Ltd

CAREER HISTORY

2015 - 16	Cisco – Service Provider Video Solutions (Custom Engineering) <i>Contract</i> (December 2015 – Nov 2016)
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Cisco provides software solutions in the Video Solutions space. The Custom Engineering group work on customizing components for specific customer requirements. Worked on a variety of projects including:

- Rules based 'head-end' Policy Manager using Camel/Java8/REST/RAML/JSON Schema. Developed using BDD with Cucumber and Gherkin. Code reviews used Gerrit.
- POC of Log file ingest using Collectd/TreasureData/ElasticSearch/Kibana
- Worked with international team on an adapter between a TV subscription system and an Email Marketing tool (Sailthru) using Ruby/AWS (DynamoDB, SQS).
- Worked with international team on 'Head-end' routing component using SpringBoot, Java8, REST, JSON, MongoDB, HornetQ, Jetty, Reactive Programming, Docker.

2015 Valuation Office Agency Contract

(May 2015 – October 2015)

The Valuation Office Agency (VOA) gives the government the valuations and property advice needed to support taxation and benefits. Currently working in a small agile team developing two of the VOA's next generation web applications – 'Rent Register' and 'Local Housing Allowance'. The UX design of these applications is based around 'user needs' and standards of the Government Digital Service. These applications are written mainly in Scala (Play Framework) together with some Javascript/JQuery. The applications are designed as microservices for deployment on the HMRC cloud platform. Acceptance testing on these projects is based on Cucumber/Selenium.

2014 Accenture Contract

(September 2014 – October 2014)

Worked on a proof of concept (PoC) for a major UK retailer. The work done in an Agile team with developers/testers/BAs/UX designers together with a Product Owner and Project Manager.

Tasks involved full stack development with Spring MVC, Thymeleaf, Spring Java Config, JQuery, AJAX, Spring Data Repositories and MySQL.

The PoC 'front end' runs on a tablet. The PoC 'back end' consisted of microservices running on a custom Cloud platform built on top of Cloud Foundry/Tomcat.

The micro services had a RESTful interface for integration testing and a remote proxy interface for inter microservice communications. The remote proxy interface hid the complexity of the underlying RabbitMQ messaging. The microservices were developed on Tomcat. Acceptance testing was done using BDD (Cucumber) with Step Definitions using Selenium WebDriver.

Development tools used were GIT, Maven, JIRA & Confluence.

2013 Prudential PLC Contract

PAAM Phase2 (June 2013 – May 2014)

Worked on the second phase of the project to update Prudential's Annuity Quotation tool used externally by Financial Advisers and internally also.

Designed and implemented sophisticated access control framework to allow internal and external users access to the system via different authentication mechanisms including 'Single Sign On' (SSO) via Kerberos. Introduced authentication 'acceptance tests' that were able to test a fully configured Spring Security Filter Chain outside of the container using Spring MockMvc tests.

Also worked on front end enhancements using JQuery, Javascript and Webtrend Analytics. The other Java 6 related technologies used were Core Spring, Spring Security, Struts2 and Web Services. The front end was deployed on Tomcat. Domain model mapping tasks were performed using Dozer.

2013 Oxford University Press (OUP) Contract

Enterprise Access Control programme (August 2011 – March 2013)

Worked in a small team of experienced senior developers on the Enterprise Access Control (EAC) programme for Oxford University Press (OUP). EAC is being applied to many OUP websites and acts as a global repository for OUP web users. EAC takes the user through a guided login/registration workflow when they access protected content. Both the login/registration forms and the workflow can be customized for each protected resource. For example, some content can only be accessed by redeeming an access token printed in the back of an OUP book. This sophisticated system involved the use of many Java 6 related technologies including Spring, Hibernate, Web Services, MS SQL Server, Velocity, Quartz, EHCACHE, Jenkins, SVN, Maven, JQuery, Spring MVC, Spring Web Flow, JSP, JSTL and CSS. The system was developed in an agile manner with daily Scrums, Continuous Integration and frequent production releases.

2011 Yell Group Contract

Yell New Media (January 2011 – April 2011)

Worked as a Senior Java Developer on several projects within the New Media group at Yell. Main responsibilities included prototyping applications and membership of an agile team developing a web application to support customer order processing. In addition to Java, main technologies used included Spring MVC, Maven, XQuery (on MarkLogic Server), XSLT, JAX-WS and JBoss ESB.

2010 The Automobile Association Contract

AA.COM (July 2010 – October 2010)

Worked as a Senior Developer on a new functionality for the AA.COM web site. Skills used include Struts, Spring, Web Services, XML, databases and JQuery. In addition to programming, the role involved design, business analysis and testing. The application server platform used for both development and testing was WebLogic Application Server.

2009/10 Allianz Insurance PLC Contract

Fusion Programme (May 2009 – May 2010)

Worked as a Lead Developer on a new insurance web site. Main responsibilities were the design, implementation and testing of the integration layer between a Java based Web Application and a Polaris RTE rating engine via WebSphere MQ. The integration layer had to deal with different types of configurable message formats. In addition to Java, the main technologies used were Spring, XML and XPath. Source code tools were Ant/ClearCase and Hudson. Development was done in an Agile style with test driven development (TDD) and daily stand ups.

2009 Virgin Media PLC Contract

Broadband Value Added Services (Oct 2008 – April 2009)

Worked as a Senior Java Developer on Web Services to support the new Virgin Media customer portal: (VSTUFF). The overall solution was based on a Service Oriented Architecture. The provisioning web service involved the use of LDAP directories and external third party Web Services and was built using SOAP/Web Services APIs and the Spring Framework. The use of extensive Unit and Integration tests helped ensure there were no significant problems when the system went into production. The application was deployed on Axis/Tomcat.

2008 Allianz Insurance PLC Contract

Direct Transformation Programme (April 2008 – July 2008)

Worked as a Lead Developer on a large IT programme. Main responsibilities were to design and implement a subsystem based on the leading Business Rules software, ILOG JRules. Made extensive use of JRules Studio and other JRules software to develop and test Business Rules software to be hosted by IBM WebSphere. Also used IBM's Rational Software Architect both for UML modelling and Java software development.

2007 Fujitsu Contract

The Post Office (Jan 2007 – Jan 2008)

Worked as key member of a very large project to upgrade the software in all UK Post Offices. Designed and implemented the core Postal Services calculation 'engine'. A significant amount of analysis was required for this piece of work, liaising with different stakeholders to iron out requirements and business rules. In addition to Java programming, the work involved data modelling both with ERD diagrams and XML Schemas. The implementation had to be resource efficient to take into account the resource restricted hardware platform.

2006 Anite Public Services Ltd. Contract

The Pensions Regulator (Oct 2006 – Dec 2006)

Brought in at the end of a development project to help meet an aggressive delivery schedule. Work included completing development tasks, unit and system testing together with bug fixing and problem solving. The system comprised of a tightly integrated suite of web based applications some internal, some public facing for data collection and processing. At the core of the system was a workflow engine which scheduled tasks including telephony and printed items.

Working on this project required a broad range of skills including Java 5, EJB 3.0, JPA, Hibernate 3.0, Tapestry 4, workflow, PostgreSQL and SOAP with Apache Axis 2. The application was deployed on Tomcat.

2006 LogicaCMG Contract

CLS Bank SI Project (Feb 2006 – Aug 2006)

Worked within a team of senior engineers on part of the Web Front End of this globally important FX Settlement System. The Front End Application was built using Spring MVC / JSTL / JSPs using an Agile Development methodology.

The strategic importance of this application demands a very high level of quality control. To this end, the team made heavy use of testing tools such as JUnit, DBUnit, HttpUnit, JMock and Selenium, during development. The application was deployed on Tomcat.

2005 Prudential PLC Contract

Deferred Annuity Pension Administration (DAPA) Project (July 2005 – Sept 2005)

Invited back to the Prudential to do some time critical enhancements to the system I helped develop.

2003 – 05 Sun Microsystems UK Ltd Contract

Sun Microsystems was a global supplier of computer hardware and software based on open standards. Sun Microsystems also supplies a comprehensive set of training and support services.

PDQ-FAST! Interface (February 2003 – April 2003)

Designed and implemented a 2 stage Webservice interface between a ColdFusion Web Application (PDQ) and a corporate Document Generation Engine (FAST!). The 1st stage is a Webservice interface between ColdFusion and a Java Server. The 2nd stage is a Webservice interface between the Java Server and the Document Generation Engine. The JavaServer translates simple SOAP requests from PDQ into a series of SOAP requests to FAST!.

PDQ Project (April 2003 – June 2005)

The PDQ project is a sophisticated web based quoting engine. Initial task was to re-write the calculation engine in Java for robustness, flexibility and increased performance. The pricing model is stored in a spreadsheet and contains around 20

sheets of pricing formulas. The Java calculation engine contains a parser to read the formulas direct from the spreadsheet and write them to a database for later use. The Calculation Engine has advanced features to detect missing formulas, cycles in formulas etc. Originally, the ColdFusion application interfaced to the Calculation Engine via SOAP WebServices. Later, the ColdFusion was migrated to JSPs to provide an 'all Java' solution. Other features were added later: the dynamic generation of office documents based on quote data; and internationalization support.

TPP Project (January 2005 – May 2005)

Worked closely with the users to design and build a web based order tracking system. This system replaced a series of spreadsheets which the users had to maintain by hand. Because the system tracked stock movements in and out of a third party warehouse, it was important that a full viewable history of all stock shipments was kept. This system provides a full series of reports for stock levels, customers and suppliers. This project used Hibernate for the data access layer between Java and Oracle.

2000 – 02 Prudential PLC *Contract*

Prudential is one of the largest institutional investors in the UK, they supply pension and insurance services.

French Web Enablement Project (September 2002)

This J2EE application provides internet access to sales and commission data for French sales agents.

- Provided expertise in the deployment of J2EE applications into WebSphere Application Server.
- Provided guidance in the use of Java's Internationalisation/Localisation capabilities
- Designed and implemented modules to provide security and user access features to the system.

Middleware Enablement Project - Security Investigation (August 2002)

This was an investigative research project forming part of a major development effort.

- Developed and demonstrated a prototype J2EE application that was secured with WebLogic 7.0/iPlanet 5.1.
- Wrote a report of on how to configure iPlanet/WebLogic, the successes, failures, and recommendations.

Internal Vesting Project (July 2001 – July 2002)

Internal Vesting is the process a customer goes through when converting a Prudential Pension into a Prudential Annuity. The aim of this project is to provide a middleware infrastructure to support the process.

- Responsible for overall system design using Design Patterns modelling using UML's class and sequence diagrams
- Mentor to a less experienced team of 4 developers.
- Designed a J2EE application that interfaces between the mainframe and annuity calculation engine.
- J2EE Application Performance Tuning, significant work with thread pools, memory caches, serialization, etc.
- Worked on the creation of a prototype that uses MQSeries as the communications backbone together with JMS and Message Driven Beans.

Deferred Annuity Pension Administration (DAPA) Project (May 2000 – July 2001)

The system was developed to administer "deferred annuities". A deferred annuity arises when a company pension scheme closes before the employee has yet to retire. This web based system's design was based on a multi-tier architecture using Java Server Pages (JSPs)/Servlets, Enterprise Java Beans (EJBs) and an Oracle database back end.

- Senior Developer on project and mentor to a less experienced team of 6 developers.
- Responsible for the design of the system 'back end' which makes heavy use of EJBs.
- Worked closely with business experts to design a modular framework for a complex pension 'revaluation' engine.
- Designed the revaluation framework so that it could be used both as an application component and driven in a multi-threaded batch job.
- Created a batch processing system capable of processing thousands of customers per hour. This batch system had features to support suspend, resume, timeout operations and sophisticated progress and error logging. This work utilised a pool of worker threads and a task queue to increase throughput.
- Designed and implemented a system to provide optimistic locking of database records to prevent 2 people updating the same records simultaneously.
- Created build scripts that deployed the application into WebSphere application servers running on UNIX.
- Designed and implemented a user management module to manage the user browser sessions with the server.

1997 – 00 Sun Microsystems UK Ltd

Sun Microsystems was a global supplier of computer hardware and software based on open standards. Sun Microsystems also supplies a comprehensive set of training and support services.

CustomerWeb Project (May 1997- May 2000)

The '*CustomerWeb*' application presented a centralised view of a Sun customer, reading customer data from several independent systems. '*CustomerWeb*' also acted as a document repository. Web technology rapidly

developed and progressed during this time and, as the project grew, the application went through several re-developments.

- The first version of the system used a combination of Java Servlets, Applets and JavaScript.
- Make extensive use of the JDBC database API and Oracle PL/SQL stored procedures
- Became team leader in August 1999.
- Provided support and assistance to internal customers in different countries, e.g. France, Singapore, and USA.
- Became the team's data modeller, working with other project teams to align our data model with theirs.
- Prepared and ran workshops for the roll out of the software to new user communities such as in Singapore.

1993 – 97 Logica UK Ltd

Logica is a global organisation and the UK's largest independent software consultancy delivering 'project based' IT solutions to a wide range of international businesses and other organisations.

Nexus (October 1996 – May 1997)

Nexus is a Logica software product that meets the needs of Independent Gas Shippers in the UK. Nexus manages customers and the complex EDI messaging between the Gas Shipper and BG Transco.

- Designed and developed a utility used to transfer data to/from BG Transco. The core import/export software was written in PL/SQL.
- Conducted beta-tests of the import/export software at customer sites throughout the UK.

Lloyds Bank (January 1996 – October 1996)

Designed and built call centre application modules to process general insurance sales for Lloyds Bank Insurance Direct.

- Took part in workshops with users to design and prototype the system using RAD techniques.
- Used OO techniques to design/build a set of GUI components in Gupta SQL Windows.
- Developed SQL to transfer data between client application and an Oracle database.

Scottish Hydro Electric (October 1993 – January 1996)

Worked for Scottish Hydro Electric on an electricity distribution control system. The application was a distributed system running 24x7, provided automatic fail over support and comprised 20 UNIX workstations and 3 VMS servers.

- Main achievement was the design and build of a fast, distributed, graphical fault tracing tool.
- Designed and implemented an easy to use messaging API to hide the complexities of socket programming
- Wrote PL/SQL to provide data access to an Oracle database.
- Created user interface components with X/Motif.