

Ian Nelson

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- Technical Lead, Architect, and Developer, with over 25 years' experience across the full product lifecycle.
- Specialist in back-end and middle-tier architecture, application integration via messaging and REST APIs.
- Excels in achieving high scalability and performance from both greenfield and brownfield architectures.
- Confirmed agilist and exponent of test-driven development, continuous integration and deployment.
- Strong database design experience, both NoSQL (CosmosDB, MongoDB) and relational (SQL Server, Oracle).
- Effective client-facing skills; has led analysis, architecture and development of successful high-profile projects.

Key Current Technical Skills

- Microsoft Azure products including App Services, Function Apps, Application Insights, Cognitive Search, Cosmos DB, Event Hubs, Key Vault, Redis Cache, Notification Hub, Service Bus, SQL Database, Storage.
- C# 1.0 – 10.0, NET Framework 1.0 – .NET Core 6.0
- API Design, RESTful Architectures
- Integration Patterns (APIs, Messaging), RabbitMQ
- NoSQL – Cosmos DB, Mongo DB, Cognitive Search
- Agile (SCRUM, Kanban, Planning Poker, XP, Pairing)
- Automated testing (TDD, BDD, Mocking)
- CI/CD (Azure DevOps, TeamCity, GitHub)
- OOP, Design Patterns, SOLID Principles

Contract Portfolio

Focussed on the architecture and implementation of modern distributed cloud-native solutions. Clients include:

NHS Digital for Kainos *(Five years, contract renewed)*

Technical Lead for the NHS App, an England-wide way to access a range of NHS services via smartphone, tablet and desktop web browser. Technologies included .NET Core, C#, Kotlin, Vue.js, Kubernetes, Terraform, FHIR HL7 R4, OAuth, Splunk, and Azure products including Function Apps, Event Hubs, Notification Hubs, Storage Queues and Containers, and Cosmos DB via both the SQL and Mongo APIs.

Led an ever-changing, multi-disciplinary team comprised of personnel from multiple organisations through over 120 fortnightly sprints, from alpha through private and public beta, to the run and maintain phase of this national system with over 30 million users. Guided the work of the team through pairing, mobbing, code reviews and technical refinement sessions to ensure that all deliverables were of high quality, met all functional and non-functional requirements, and integrated cohesively with those created by the wider project team and NHS Digital.

Architected and led the development of the App's notification and messaging capability. This facilitates the secure and sub second delivery of health-related communications from NHS organisations to the patient's mobile device, replacing more costly communication methods such as SMS or mail. The system has a proven sustained throughput of over 1000 messages per second, with over 1.3 million messages being sent in December 2022 alone.

Developed integration points and liaised with third parties to surface a range of patient-facing services through the App, via web-based and API integration techniques. An example of this is COVID Pass, a system that allowed citizens to access hospitality venues and international travel during the COVID-19 pandemic.

Encouraged a DevOps culture including collective code ownership, infrastructure as code, and all team members sharing responsibility for preparing fortnightly releases to production. Facilitated and promoted regular recorded Knowledge Sharing sessions to spread technical know-how among the distributed team. Regularly contributed to externally facing "Show and Tell" sessions to promote the work of the App team.

Access Intelligence *(32 months, contract renewed)*

Backend architectural lead tasked with the rapid development of a greenfield Azure-hosted system required as the result of an acquisition. Technologies included Azure Cognitive Search, SQL Database, Service Bus, Rabbit MQ, WebJobs and a REST API. Defined CI/CD methodologies, including Git push deployment to Azure App Service.

Piksel *(26 months, contract renewed)*

Supplied .NET development capability to a white-label Video-On-Demand solution. Technologies included Microsoft Azure, C#, ASP.NET MVC4/5, JavaScript, jQuery, Entity Framework, WCF, and SQL Server 2008/2012.

The Health and Social Care Information Centre *(Ten months, contract renewed)*

Designed and implemented a distributed suite of systems for a national programme to calculate health gains after surgical treatment. Followed a SCRUM approach through nineteen fortnightly sprints from inception to live release.

The implemented solution comprises of multiple Windows services, RESTful OpenRasta APIs, an MVC3 portal, and numerous SQL Server 2008 Integration Services packages. Supporting technologies used included NHibernate, Castle Windsor, NUnit, NCrunch, Rhino Mocks, SpecFlow and TeamCity.

Atos Origin *(11 weeks, fixed timescales)*

Joined a small established agile team to develop new systems required because of M&A activity within the parcel industry. Got rapidly up to speed with the existing architecture, codebase, and business domain, delivering new functionality from day one. Took ownership of data migration and registration requirements and made a wide variety of commits across the suite of systems. The primary application is a WPF (Prism) rich-client application, with supporting systems including WCF endpoints, Windows services, and an ASP.NET MVC3 administration site.

Marshalls *(eight months, contract renewed)*

Architected and implemented a greenfield message-based system to capture and rank sales leads from multiple systems. Technologies included MSMQ, WCF, C# 3.0, WF, SQL Server, NHibernate and Castle Windsor.

Ventura *(six months, contract renewed)*

Worked to aggressive timescales to design and develop systems required by a new central government call centre. Technologies used included C# 3.0, .NET Framework 3.5, WCF, NHibernate, Monorail and Oracle 10g.

NHS Choices for Capita *(eight months, contract renewed)*

Developed functionality for the NHS.UK website allowing the display and editing of pages for services including dentists, opticians, and pharmacies. Technologies included C#, SQL Server and SharePoint.

Earlier Employment History

Prior to entering the freelance market in 2008, notable permanent employment positions held included:

Marshalls

Technical Architect and Lead Developer of a mission critical ASP.NET / C# / SQL Server solution used by call centre staff at eight locations and via the internet by 350+ builders' merchants for the creation of quotations.

ioko365

Lead developer of IMS Health "Early-Insight" web application that presents daily sales data to subscribing pharmaceutical companies. Created using ASP and VB6 COM objects with an Oracle 8i database.

Career Chronology

Contract Roles

03/2018 – 03/2023	NHS Digital (for Kainos)	08/2009 – 03/2010	Marshalls
08/2017 – 03/2018	Drax Power Limited	10/2008 – 07/2009	National Institute of Health Research
12/2014 – 08/2017	Access Intelligence	03/2008 – 09/2008	Ventura
09/2014 – 11/2014	Capita Customer Management		
07/2012 – 09/2014	Piksel Inc		
05/2012 – 06/2012	Jet2.com		
05/2011 – 03/2012	HSC Information Centre	10/2003 – 03/2008	Marshalls
03/2011 – 05/2011	Atos Origin	03/2003 – 09/2003	Broker Network
01/2011 – 03/2011	Edexcel	12/2000 – 01/2003	ioko365 (formerly Infocom)
04/2010 – 12/2010	NHS Choices (for Capita)	09/1997 – 12/2000	Keane (formerly Icom Solutions)

Education

BSc (Hons) Mathematics, University of Nottingham

Topics studied included Structured Programming, Coding & Cryptography, Game Theory, Algorithmic Graph Theory, Applied Probability, Combinatorial Counting and Statistical Inference.