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Senior Software Engineer / Team Lead

- **Senior Software Engineer** : software developer; mobile apps (Android, iOS, also Windows Phone), database; RESTful services and other web technologies; DevOps; GIS / spatial systems; client/server systems; system integration.
- **Broad experience** : utilities, local government, telcos; twenty years in industry; self-employed, contract, consulting and permanent roles.
- **Multiple** languages, environments, databases. Wide-ranging interests.
- **Team Lead**, mentor, and buddy to new starters;
- **Agile** scrum master; Kanban.

Application development, mobile systems, data integration

- Application development, data migration & translation, database administration; utilities, telecommunications, asset management and local government.
- Field/mobile systems – Android, iOS, Windows Phone; tablets, smartphones
- Client/server apps; systems integration (B2B, SAP & SAP XI, Maximo, WASP, GenTrack, Pathway.)
- Data migration and translation projects.

Programming languages and environments

- Languages : Java, Javascript, Objective C, C#, Python, Delphi, Visual Basic, VBA, VB.Net, Embedded Visual Basic, Smallworld Magik, ORACLE PL/SQL, C, FORTRAN
- Databases : SQLServer & SQLServerCE, MySQL, Smallworld VMDS, Access/Jet, ORACLE, DB2, PostgreSQL & PostGIS.
- Spatial systems : Smallworld 2-4, ArcView 3 - 9, ArcPad 6/7; MapInfo, FRAMME, GTech, TatukGIS, Manifold.Net, GeoServer.
- Internet/Intranet : REST/RESTful services, Node, ASP, PHP, HTML, XML, JavaScript, Java applets, servlets; MediaWiki, WordPress and other CMS systems.
- Environments : DOS, Windows 95 – 10, MacOS/OSX, iOS, Android, UNIX, Linux.

DevOps

- Continuous Integration : Jenkins.
- Source Control systems : git, TFS, SVN.
- Automated testing : Visual Studio, Cucumber, Appium/Selenium.
- Docker, AWS.
- Splunk operational intelligence / log analysis.

Data Conversion, Migration, Capture & Integration

- Data Translation and Migration between systems : spatial & non-spatial.
- Data Integration : SAP, GenTrack, Maximo etc.
- Data Capture / Conversion projects – design, build, implementation and training.

Documentation, training, teamwork

- Proactive in developing extensive documentation :
 - specifications, design, user requirements and user acceptance tests.
 - wikis, training manuals, procedures, progress reports, root cause analysis.
- Clear, comprehensive, structured writing.
- Experience with training, skills transfer, mentoring.
- Agile methodologies : scrum and Kanban.

Corporate Clients and Employers

- CLEAR / TelstraClear / Vodafone, Telecom NZ and Chorus (telcos); Vector, United Networks, TrustPower, Horizon (electricity); Auckland City Council, Tauranga City Council (local government); Fiserv (mobile.)

About Simon Garton

Career

I have had a broad and unusual career so far : originally an English citizen and starting off with a **BSc in Zoology** and an **MSc in Biology**, I moved to New Zealand in 1993 and started work as an Analyst Programmer for **Clear Communications**, now Vodafone. Seizing an opportunity to learn and implement a **GIS (Geographic Information System)** for Clear, I used the skills and experience gained to set myself up as an **independent GIS/IT consultant**, contracting to most of the major utilities and telcos in Auckland. The systems were a mix of asset-management and operational support, with data migration and integration with other in-house systems, and I developed numerous field systems to capture and maintain the asset data.

At the same time, I developed and ran a small consultancy building and implementing **mobile asset management systems**, particularly concerned with vegetation management around power-lines. I also worked for a small start-up, designing and building a full technical demo of a **mobile augmented-reality** asset management system (<http://augview.net>) Running on smartphones, the user sees a 3d view of both above-ground and underground assets superimposed on the camera view.

During 2013 I implemented and supported a major upgrade to Chorus' main database system. I also worked on an SAP integration project, building an **Android** tablet system and integrating it with **Vector's** SAP system to upload pole inspection results and download supporting data. I also extended a mobile vegetation management solution (**Windows tablets**) for **Waikato Energy Limited**, which integrates with the office system I had previously built for them.

Current role

From late 2014 to late 2016, I worked at **Fiserv** as a **Mobile Team Lead**. Initially with the Business system team, I then moved into the Retail system team with two goals : to continue to develop and expand my development skills and product knowledge, and also to rescue the team – with a difficult role and with team members leaving, it was struggling and had partially lost it's way.

I achieved both goals : my role became wide-ranging, primarily consulting to architects and feature development teams; and helping guide development and release of the software. I worked with the product owners, product managers, and QAs to support the development, and as scrum master, I helped focus and reinvigorate the team, bringing them back to full speed. My success was recognised with MVP nominations, Living Proof awards, and promotion.

My team took new code from the developer teams and **integrated** it into the apps; ran a suite of **automated tests** (unit, UI and load) on the new build; created the **release package**, and **delivered** it to the implementation teams. I was first to investigate **issues and bugs**, providing root cause analysis and coordinating the response; I **problem-solved**, ran **proof-of-concept** exercises and fulfilled a whole range of **DevOps** roles : managing the **Jenkins** Continuous Integration environment, bringing new servers and slaves on line, documenting and enforcing coding standards, and updating tools and SDKs.

Skills

I can develop in multiple languages – **Java**, **Objective C**, Smallworld **Magik**, **PHP** and **Delphi** are all languages I've used in depth. I've worked on many **full stack** projects, designing the database, building the services, administering the servers, and building the apps. **Data migration** and **systems integration** have been a recurring theme, and I have significant experience with **complex integrations**, typically linking the GIS systems to other **asset management systems** (such as SAP, Maximo or GenTrack) and external **B2B systems**. I recently explored some machine learning systems, and have been using Docker on AWS to support some of my mobile projects.

Work History *recent*

**November 2014
– December
2016**

- **Mobile Team Lead**
 - Initially an “Intermediate” developer, promoted to “Senior” in the mid-year reviews, and then to “Mobile Team Lead”, I was the sole mobile developer for the Retail System Team at Fiserv.
 - The System Team owns the retail apps & platform code, and investigates / resolves production issues; releases new versions to the integration team, and consults to architects and feature development teams. I extended my role to cover all phases of mobile development, with a strong interest in DevOps : in particular I took on administering and developing our Jenkins CI environment. I also ran technical investigations and proof-of-concept exercises. Development was in both Android (Java) and iOS (Objective C).
 - I was the Agile scrum master for the team, facilitating scrum ceremonies, resolving issues for the team and generally ensuring the team works efficiently and happily.
 - I also managed eight junior developers, and mentored new starters in the company.
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**October -
November 2014**

- **Application Development / Data Migration : HV Events project at Vector**
 - The HV Events system allows Vector to manage and report on outages across their network, and requires a complex data model, recording “platforms” and “isolatable sections” and linking them through to customers and feeders.
 - Asked back by Vector to assist with extending previous work, I developed tools for their Smallworld database to extract the data from the network records database, and provided several innovative visualisations to help Vector understand the network, and cross-reference against SCADA to check data integrity.
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**January 2014 –
September
2014**

- **Mobile Application Development : iOS and Android**
 - I designed, built and implemented a smartphone based inspection system, **MetaSpector**
 - Designed to provide simple but useful functionality for asset managers and field crews (inspect assets, take photos, store metadata for searching and reporting), it was broad in scope and application. Native **iOS** and **Android** apps were available, as was a reporting website. As well as developing the mobile apps, I wrote the web services to support them, and set up the cloud-based servers and MySQL databases that they use.
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**December 2013
– September
2014**

- **Mobile Application Development for IAMSL; Data Integration with SAP for Vector**
 - Designed and built an **Android** based **Pole Data** system running on tablets and phones so that IAMSL can inspect poles for Vector.
 - Designed and built a Windows application (**Pole Data Wizard**) to download the inspection data, check it for quality, link it to the correct SAP IDs, associate photos and drawings with the inspection, and then upload the entire work package for integration with Vector’s SAP system. Approximately six hundred inspections plus three thousand photos are uploaded each month.
 - The main system went live in March. In September, I assembled, cleaned up and prepared twelve years of historical data for the same integration process – some 30,000 inspections and 120,000 photos were available, which provided some good scale challenges.
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Work History 2008 – 2014

**November 2012
– January 2014**

- **Application Development & System Administration : Consultant for GE Energy to Chorus**
 - Between November 2012 and January 2014, I subcontracted through **GE** to **Chorus**, New Zealand's largest telecommunications company.
 - Most of the time was spent on the **Smallworld 4.3 upgrade**, installing the new system, updating the existing code and then documenting and supporting a lengthy testing process.
 - I also supported the **MDU (Multiple Dwelling Unit)** project, testing the new functionality and resolving bugs and issues.
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**June 2011 –
September
2012**

- **Augmented Reality : Spatial Information Systems Ltd**
 - I designed and built a complete mobile **3D / Augmented Reality** system for spatial databases. Running on Windows Phones, the application presents the user with a live video stream on which a 3d view of the network data is displayed; the user can then select assets to view their attributes and update or delete them as appropriate. As well as developing the client in C#, I designed and implemented the server side, writing **RESTful** services to manage authorisation, map generation, searches, asset attributes and updates and the 3D model.
 - The project stalled for a while on hardware limitations, and I moved onto new roles; my Windows Phone app was subsequently migrated to iOS and Android by others.
 - The current version can be seen by googling "AugView".
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**November 2008
– April 2013**

- **Application Development & Systems Integration at TelstraClear (now Vodafone)**
- **Local Loop Unbundling** project – built a complicated and fully integrated Network Allocation Engine (**NAE**) for which receives orders for services (ADSL, WSA and UFB) at an address, and, using a wide range of **RESTful** services :
 - Locates the address and appropriate exchange spatially
 - Examines network records to determine available services and capacity in the exchange
 - Network traces from the exchange through the backhaul network to the network core to identify ports
 - Allocates equipment and circuits
 - Builds work orders and instruction sets for other systems
 - Supports confirmation, closing and cancellation of orders.
- Mission critical to TelstraCLEAR, this system is still in use, processing thousands of allocations a day.
- I also developed several rich intranet applications using the Flex framework to review and update the network data.

Work History *2004 – 2008*

**June 2008 –
November 2008**

- **Application Development & Systems Integration** at **Auckland City Council**
 - **Pathway integration / LIMs** – rewrote the **Auckland City** LIM generator to work directly with Pathway data. LIMs (Land Information Memorandum documents) are created in Pathway; the Smallworld GIS then uses RESTful services to read details of the applications, retrieve, filter and assemble the appropriate consents, permits and licences into an XML data file. XSL style sheets and XSL FO (Formatting Objects) information is then used to construct the PDF; the GIS prints and attaches PDF maps, retrieves any consent documents from the document management system, and produces the complete LIM.
 - The project also involved rewriting the interface to the **ePathway** online system where the Smallworld GIS retrieves e-applications for reports; assembles and prints the report with GIS data; and then emails the customer with a URL to access the report.
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**June 2006 –
October 2009**

- **Data Migrations** at **Vector**
 - **NRM Translation Electricity** – wrote, tested and implemented a database translator for the electrical network at **Vector**.
 - **NGC Translation** project – wrote, tested and implemented a translator to read the NGC Gas network from their Intergraph GTech system into Smallworld NRM Gas at **Vector**.
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**October 2006 –
November 2006**

- **Mobile Application Development : iSchedule/iTimesheet** for **Transfield**
 - I designed, built and tested a fully integrated mobile scheduling and timesheet system for Transfield to use with the Rodney District Council. Jobs could be created in the office, dispatched to the crews to complete and update using their PDAs, with the data then being returned to the office automatically.
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Academic Qualifications

**August 1990 to
June 1993**

- Master's degree (MSc) in **Biology** at the **University of California, San Diego** (Fulbright Scholar)
 - My studies were largely concerned with computer-based ecological modelling, examining questions on optimal game park design and extinction models. Towards the end of my degree I also examined the discipline of Artificial Life, where computers and programs are developed to mimic biological systems. I was first exposed to GIS systems at this point, writing my own spatial modelling systems.
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1986 to 1989

- First class honours degree in **Zoology** from **University of Wales, Aberystwyth**. Exchange to **University of California, Berkeley**.
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Personal information

Nationality

Dual British/New Zealand, resident in New Zealand.

Marital Status

Married, with three children.

Interests

Kung Fu (black belt, instructor); piano; stage lighting; ex-marathoner; programming challenges (e.g. Google Code Jam); Arduino, Raspberry PI; machine learning; artificial intelligence.