Curriculum Vitae

Scott Rasmussen

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PERSONAL PROFILE

NAME	**Scott Rasmussen**
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WORK EXPERIENCE

NZ Transport Agency: Sept 2017 – Current (Contract)

- Security Architect
- Solutions Architect

Tasks

- Designed the Security Development Lifecycle Tool (SDLT) – An open source digital security assurance tool for Government. Presented the SDLT to GISF twice.
- Implemented the SDLT with integrations to the Security, Technology, Privacy, and Information Teams for digitizing assurance/risk workflows.
- Development of digital security risk assessment framework and automated tool for implementation (DSRA)
- Consulted on multiple projects and programmes as Subject Matter Expert in Security, Solutions and DevSecOps.
- Subject Matter Expertise (Security) on PCI-DSS SAQ-A-EP compliance project
- Subject Matter Expertise (Security) on Migrate to Cloud project, migrating 200 legacy applications to Microsoft Azure Cloud.
- Subject Matter Expertise (Security, Software) on establishment of DevOps practice targeting Microsoft Azure cloud platform.
- Solution and methodology design and implementation of Enterprise Service Bus and API architecture
- Liaise with external vendors and internal stakeholders regarding software design for future product development

Standards Used

- New Zealand Information Security Manual (NZISM)
- ISO27001
- Payment Card Industry – Data Security Standard (PCI-DSS)

Achievements

- Placed NZTA 2nd in KPMG 2020 Cyber Challenge (Teams)
- Individually placed 3rd in KPMG 2020 Cyber Challenge
- Designed and Implemented Open-Source SDLT Product (github.com/NZTA/SDLT)

Technologies Used

- Clouds: Microsoft Azure, Amazon Web Services
- DevOps: Azure DevOps
- Enterprise Architect, Mulesoft/CloudHub/Anypoint Platform
- Visual Studio, Eclipse, CMake, MinGW, GCC, Python, PHP, C#

- mySQL, postGRES
- Git/GitHub

New Zealand Racing Board – April 2016 – September 2017

- Solutions Architect
- Security Architect

Tasks

- Subject Matter Expertise (Security) on PCI-DSS SAQ-D compliance project.
- Subject Matter Expertise (Security) on assessing organisations readiness for the New Zealand Anti-Money Laundering legislation.
- Lead solutions architect on $25mil project building a nationwide network and acquiring assets to ensure the live broadcast of two TV channels daily. Delivered all project milestones on time and under budget.
- Technical lead for request for information, request for proposal and request for tenders with external vendors
- Solution design for cloud-based products
- Security architecture, including vendor engagements for penetration tests
- Security Vulnerability discovery, analysis, and remediation design
- Process improvement to change management procedures to reduce security risk

Zaita (Self-Employed) – Feb 2009 – Current

- Software Architect (MetService, NIWA, GNS)
- Software Design/Development/Prototyping (CCDHB, NIWA, MetService, EFX NZ Ltd)
- Software Development Consultant (Volpara Solutions)
- Network/Hardware Consultant (Volpara Solutions)
- Technology Consultant (MetService, NIWA, Volpara Solutions)

Tasks

- Solution and methodology design and implementation of Enterprise Service Bus and API architecture
- Liaise with external vendors and internal stakeholders regarding software design for future product development
- Solution design for cloud-based products (Amazon, Azure)
- Implementation and governance of development methodologies
- Multi-platform development of high-speed scientific software
- Multi-threaded & multi-platform design and development of software components.
- Setup of multi-platform automated building tools, medical imaging software, databases, networks, and secure remote access
- Implement a software testing methodology that is compliant with the FDA (Federal Drug Administration) standards for software verification and validation in medical devices
- Design and developed a secure implementation of software licensing when used in a distributed multi-platform library for medical and academic use

Standards Used

- C++11, C++14, C++17
- ISO27001
- Payment Card Industry – Data Security Standard (PCI-DSS)

Achievements

- 2019 guest speaker at Center for the Advancement of Population Assessment Methodology (CAPAM - https://capamresearch.org/)

Technologies Used

- Clouds: Microsoft Azure, Amazon Web Services
- DevOps: Azure DevOps
- Visual Studio, Eclipse, CMake, MinGW, GCC, Python, PHP, C#
- mySQL, postGRES, sqlite
- Subversion, Git/GitHub
- Jenkins automated build system
- DCM4CHEE PACs software, ClearCanvas PACs/RIS
- Boost, VNC, SSH, DCMTK, NetCDF
- Slackware, OpenSuSe, Ubuntu, Fedora, RedHat Enterprise Linux
- Oracle VirtualBox, VMware ESXi
- Microsoft Windows 7/10

Publications

- I. Doonan, A. Dunn, K. Large, C. Marsh, S. Rasmussen, S. Mormede (2016) CASAL2 User Manual, 2016-01-13 (rev. 5abcf8c). National Institute of Water & Atmospheric Research
- Dunn, A.; Rasmussen, S.; Mormede, S. (2014). Spatial Population Model User Manual. NIWA Technical Report 138. 196 p.
- Dunn, A., S. Rasmussen and S. Mormede. 2012a. Spatial population model user manual, SPM v1.1-2012-09-06 (rev 4806). Document WG-FSA-12/46. CCAMLR, Hobart, Australia: 164 pp.
- Dunn, A. and S. Rasmussen. 2008. Development of a spatially explicit age-structured statistical catch-at-age population dynamics model for modelling movement of Antarctic toothfish in the Ross Sea. Document WG-SAM-08/14. CCAMLR, Hobart, Australia: 31 pp.

MetService – Feb 2011 – Feb 2012 (Fixed Term)

- Software Development Manager
- Software Architect

Tasks

- Staff management, task and development planning for team of 5 Software Developers and 2 Software Testers
- Interviewing and hiring of staff
- Planning software releases, tasks and resource allocations to ensure delivery
- Advising on technical decisions regarding software development and delivery
- Working with product development group to plan a new product and software development pathway to release
- Working with project manager to ensure the business is creating the appropriate requirements communications for software technical planning to take place
- Researching new technologies and their appropriateness for current and future product development
- Working with Amazon with their GPU instances to research the feasibility of product development using Amazon GPU instances with Nvidia Tesla video cards

Technologies Used

- Amazon EC2 (Cloud)
- C++, EclipseCDT, C#, Python, Ruby

- Subversion
- Jenkins automated build system,
- Microsoft Windows 7, Redhat/CentOS/Ubuntu Linux

National Institute of Water and Atmosphere (NIWA) - Feb 2008 – Feb 2009

- Software Developer / Scientific Programmer

Responsibilities and Achievements

- Developed a multi-platform, multi-threaded C++ spatial population model (SPM). The SPM is used to model Antarctic toothfish, and while still in development it has received interest from other modelers for use with tuna, eels and water-flows
- Implemented a modified genetic algorithm and was able to prove that a well-used quasi-newton algorithm was more favourable towards local minimums than had been known
- Designed and developed a PHP web-application for the recording and maintenance of New Zealand's energy assets. This was done for the National Centre for Climate-Energy solutions. This was developed using the Symfony framework
- Worked on Eco-Connect climate product to provide bug fixes and assistance with designing future tasks and performance profiling methods
- Designed and developed a software interface to the Campbell CR1000 data logger (http://www.campbellsci.com/cr1000). This was a full implementation of the PakBus protocol in C# for use with NIWA's climate logging server suite
- Researched and presented analysis reports on various types of software integration engines for use in connecting data sources within NIWA together for automated data synchronization
- Assisted in the re-structure of the software development capabilities at NIWA. Extended period of redundancy to help assist in the hand-over between myself and the new Auckland based Software development team

Technologies Used

- C++ (MingW/GCC) with Eclipse CDT
- C#/ASP.NET
- PHP5 with Symfony V1.1.4 and Eclipse PDT
- PostgreSQL
- Subversion and Microsoft Visual Source-Safe with Source Off-Site

Publications

- A. Dunn, S. Rasmussen, & S.M. Hanchet (2009). Development of a spatially explicit age-structured statistical catch-at-age population dynamics model for modelling movement of Antarctic toothfish in the Ross Sea. WG-SAM-09/18
- Dunn, A.; Rasmussen, S. (2008). Development of a spatially explicit age-structured statistical catch-at-age population dynamics model for modelling movement of Antarctic toothfish in the Ross Sea WG-SAM-08/14. 31 p. National Institute of Water and Atmospheric Research. Unpublished manuscript presented to the Working Group on Statistics, Assessments, and Modelling of CCAMLR

Health Intelligence (CCDHB) – March 2008 – Feb 2009

- Contract Off-site Software Developer

Responsibilities and Achievements

- Designed and developed service for migrating patient records between legacy and modern patient management systems. Application is a multi-threaded C# windows service with SQL Server database backend. Required to process 800 million clinical records and selectively transfer up-to 100 million of them. Full database auditing is utilized resulting in over 1.6 billion database entries. Specialized internal caching of database queries and file I/O had to be employed to reduce load/stress on systems and decrease time required for migration

Technologies Used

- Microsoft C#
- Apache / Microsoft IIS
- HTML, Javascript
- C++ with Eclipse CDT

Health Intelligence (CCDHB) - Jan 2007 – Jan 2008

- Analyst Programmer

Responsibilities and Achievements

- Designed, developed and implemented a stand-alone Microsoft Active Directory authentication server utilizing C# for use in a single sign-on solution
- Designed and developed a C# Allied Health statistics collection application. Used Web (SOA) technologies and Active Directory authentication
- Resolved issue with history clinical data application that had prevented it from being used for 7mnths prior to me being assigned to it. Application provided a portal between legacy and new systems
- Provided manager with a scalable method of version control for application databases that can be tied into the Active Directory authentication server
- Worked with Risk Manager to analyze potential integration solutions between the patient management system and clinical systems front-end to increase application security and reduce the security risk
- Maintained and supported existing software applications; including Radiology, Mortuary and Mental-Health

Technologies Used

- Microsoft Visual Studio .NET, MS SourceSafe
- MS ASP.NET, C#, VB, ADO.NET
- HTML, XML, CSS, JavaScript, VBScript, COM+, IIS
- MS SQL Server 2000, T-SQL, Oracle 10G Database
- MS Visio, MS Office
- Oracle BPEL, Oracle Application Express, Oracle JDeveloper
- Eclipse CDT (C++)

Provenco Retail Automation – Jan 2006 – Jan 2007

- Software Developer

Responsibilities and Achievements

- Solved financial reporting issue for BP NZ. This involved tracing transactions through the product suite, modifying message streams between point of sale and back office, developing enhanced table layouts in the database, altering stored procedures and altering crystal reports to reflect the correct information that was to be reported on
- Developed a browser independent session-timeout handling system that worked on the back office system with browser-frames to ensure the integrity of product orders and information being entered that would exceed a normal timeout period
- Worked in a team to retro-fit unit tests to the back office software suite using C# and NUNIT. The back office was developed as a SOA application with ASP and Delphi COM+ components. Over 10,000 tests were produced
- Enhanced and bug-fixed Electronic Payments interface to work with server for India client Bharat Petroleum (BPCL)

Technologies Used

- Microsoft Visual Studio .NET 2003, MS Visual Source Safe
- Delphi 6
- MS SQL Server, MS Project Server, Lotus Notes
- JavaScript, VBScript, ASP, C#.NET 1.1, NUnit, IIS6.0
- XML, XSL and XSLT

EFX Group (NZ) Ltd – Feb 2003 – Dec 2005

- Software Developer
- Hardware Manager

Responsibilities and Achievements

- Researched, designed and developed a CAD processing application for the structural steel engineering industry - http://www.multidrillfx.com
- Designed online client support database and application to store client records and history about their infrastructures
- Designed, developed and implemented multiple Windows 20003 domain based networks for clients. Many of these include Linux based servers that performed auxiliary tasks
- Responsible for hardware related issues from clients, customer support, troubleshooting, repairs and software development

Technologies Used

- Microsoft Visual C++ 6.0, GCC
- WxWidgets 2.6.X
- Dev-C++, Eclipse + CDT, InnoSetup
- MySQL, PostGRES, CVS
- Linux, Sendmail, Fetchmail, Apache
- Windows 2003 Server, Windows 98/2000/XP, Microsoft Exchange

Other Previous Employment

- Proformac Computers – Dec 2002 – Feb 2003 (Summer contract)
- Freelance Web Development Feb 2000 – Aug 2001

• Education

Bachelor of Information Communication and Technology

- Universal College of Learning, Palmerston North, 2002-2004
- Yr2 Studied: Advanced Programming, Programming Project (Small), Cisco CCNA Curriculum, Internet Programming, Database Design
- Yr3 Studied: Programming Project (Large), Software Construction, Software Maintenance, Data-warehousing, Industry Based Programming Project

CompTIA A+, Level 2 & 3 Certificates in Computer Technology

- Practical Education Training Centre, New Plymouth, 2001

Level 5 Certificate in Business Computing

- Western Institute of Technology in Taranaki, New Plymouth, 2000
- Studied: Database Design, Software Development, Networking, Operating Systems, Website Development, Business Management, Business Systems

New Zealand School Certificate

- New Plymouth Boys High School, 1997-1999 (6 subjects)
- Studied: Latin, Spanish, Accounting, Math, Science, English

Non-Professional

- PADI: Open water, Advanced open water, Rescue, Master scuba diver
- TDI: Nitrox/Enriched Air
- SDI: Solo diving
- IANTD: semi-closed rebreather diver (KISS GEM)

• Interests

Scuba Diving

- Achieved Master Scuba Diver certification
- Dive a KISS GEM semi-closed rebreather

Aquaculture & Marine Fish

- Successfully artificially incubated eggs from an IUCN endangered species the Bangaii Cardinal (Pterapogon kauderni)
- Have propagated various corals and distributed these to other hobbyists.

Electrical Engineering

- Development of bespoke electrical components including automated water top-off unit for fish tank using Arduino devices.

Programming

- Developing knowledge on Machine Learning and Artificial Intelligence techniques and how they differ from optimization problem solving
- Developing knowledge on highly scalable processing systems to take advantage of super-computer and many-core CPU architectures
- CI/CD prototyping with Microsoft Azure and AWS Cloud environments
- DevOps prototyping with Microsoft Azure and AWS Cloud environments

Animals

- Bearded dragon
- Beekeeper. Currently own and manage a small beekeeping business.

Business

- Have participated in the Wellington startup weekend 2011

TV/Movies/Video Gaming

- Developed multiple plugins for Minecraft
- PC and Console gamer, Xbox360, PS3
- Established and lead a World of Warcraft guild of 200 members. This included organizing teams and leading raid (dungeon) instances with 20 and 40 people teams.

• Referees

Available on request