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Thomas Han

I have extensive experience in developing and architecting enterprise applications and more recently distributed reactive applications. I consider myself to be an excellent all-rounded full-stack software engineer with skills in AI, big data, data analysis, backend, front-end, and DevOps. I am passionate, enthusiastic, and skilled in a variety of processes and technologies, including but not limited to Domain-Driven Design (DDD) and Test-Driven Development (TDD). I always look for new ways to solve problems and think outside the box. With knowledge and experience which spans both in width and depth, I enjoy applying my skill set to solve real-life scenarios.

Summary of expertise:

- Expert knowledge and experience in developing and architecting enterprise applications
- Key skills are: clean architecture, clean code, delivery and stakeholder management
- Key industries are: Trading, telco, energy, finance, postal, e-commerce and education
- Outstanding technical, analytical and design skills
- Strong interpersonal skills and team skills
- Graduated BE in Electrical and Electronic Engineering and BSc in Computer Science from University of Canterbury, New Zealand
- In my spare time, I like to experiment with new technologies, especially reactive programming, big data, AI algorithms and DevOps technologies
- Contributes to the open-source community. Vertx, techan.js, Akka, ZKGrails. Please check out https://github.com/thomashan for all the projects I contribute to.

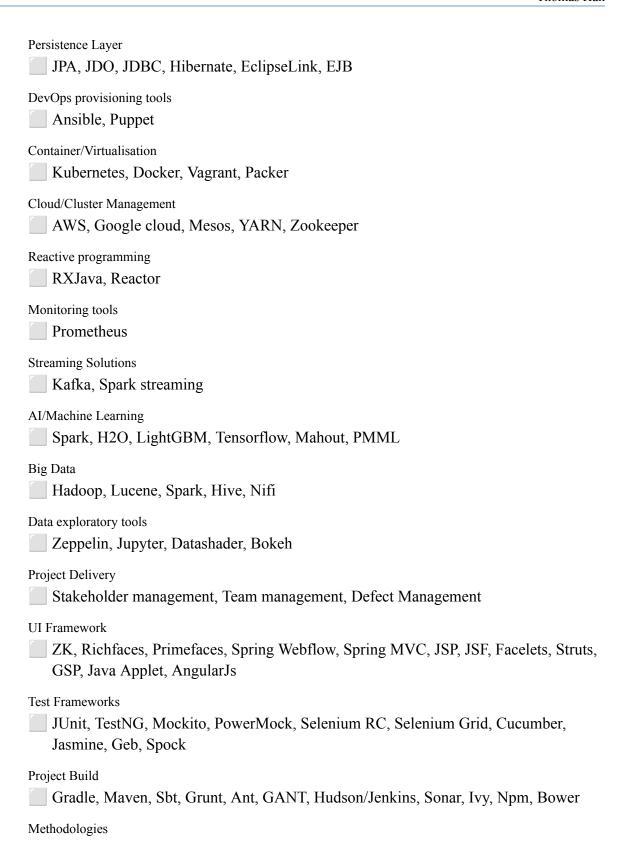
Technical Skills

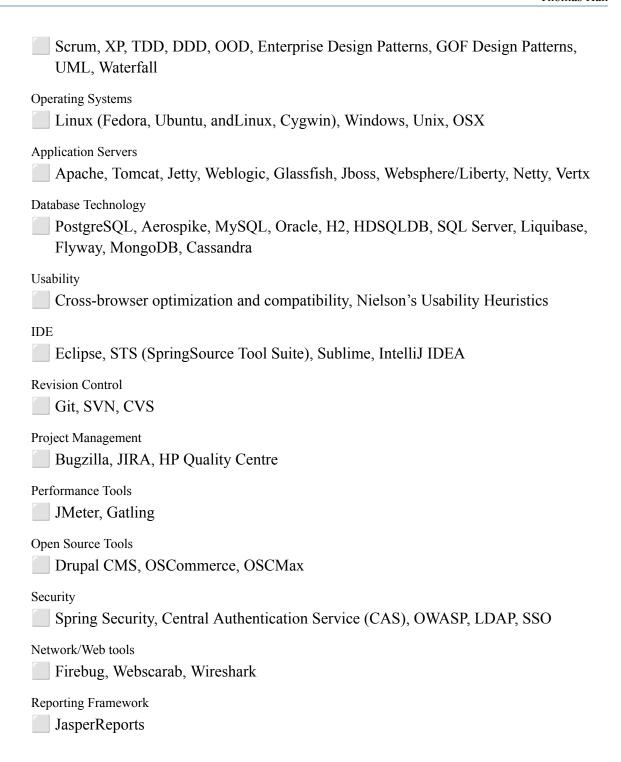
Programming Languages

Java, Groovy, Scala, Javascript, Ruby, Python, PHP, XML, XPath, SQL, HTML5, CSS3, DOM, JSON

API/Frameworks

Akka, Grails, Rails, Play, JEE (EJB), Spring, SOAP, JSR 310, JQuery, Quartz, Titanium, Lucene, Vertx, RX, JMS, Webservice, REST, Microservices





Education

BE in Electrical and Electronic Engineering

University of Canterbury (February 2000 – November 2003)

BSc in Computer Science

University of Canterbury (February 2004 – November 2005)

MSci in Computer Science (Not Completed)

University of Canterbury (February 2006 – November 2006)

Experience

eFX Engineer at ANZ September 2019 – current

Project Prophet

Technology Java 8, Chronicle, Ultra Messaging, Docker, Ansible

Project Outline

Prophet is a high frequency, low latency, garbage-free trading system, for market-making, skewing, and hedging. It handles up to 20,000 aggregated ticks from various inter-bank systems to give signals for pricing and skewing.

I was responsible for:

- uplifting the DevOps capability using docker and ansible
- architecting migration of QA environments into AWS
- extending existing pricing to cope with new event events
- ironing out production deployment processes
- managing the CI/CD process across all core eFX tech stack including algo trading, price distribution, and hedging system

Senior Solution Designer at nabtrade September 2018 – September 2019

Project Cash Hub Program

Technology Spring boot, Kafka, SOAP, IRESS, FNZ, SecuritEase

Project Outline Cash Hub Program is circa \$13M program which aims to

simplify the nabtrade's cash account solutions by settling directly with the NAB's Cash Manager Account (CMA). I was lead solution designer for the program and was involved in designing the integration between FNZ, IRESS and SecuritEase. The funds lock solution was re-architected to work with CMAs using real-time funds transfers and event sourcing in Kafka Stream. I worked closely with a team of BAs to work out the business requirements and come up with fully functioning

software designs for the business requirements.

Distributed Systems Architect / Quant Trader at Startup June 2017 – September 2018

Project AI trading system

Technology Scala, Groovy, Java, Spark, Akka, H2O, Kafka, Zeppelin, Jupyter,

Tensorflow, Deep Learning, Machine Learning

Project Outline Architected a reactive algorithmic AI trading system.

Senior/Lead Full Stack Software Engineer at Odecee March 2014 – June 2017

Client Telstra CTO Big Data (October 2016 - June 2017)

Project Location Insights

Technology Scala, Spark, Hadoop, Hive, YARN, Zookeeper, Kafka, Nifi

Project Outline The project leverages massive dataset to build location insights

for various clients. Such insights are being used for traffic management planning and event planning for big organisations.

Client NAB (December 2015-October 2016)

Project E301 Service Engine

Technology Spring boot/Gatling

Project Outline I led a service engine development squad. I was involved in

architecture, development and delivery of service engines. Service engines are API microservices that are being used throughout NAB. Some of the previously developed API such as Accounting Package Integration is being integrated as part of

the service engines.

http://news.nab.com.au/news_room_posts/nab-to-launch-api-developer-p

ortal/

https://developer.nab.com.au/

Client NAB (November 2014-December 2015)

Project Accounting Package Integration Project/NAB QuickBiz Loan

Technology Play

Project Outline Greenfield project in which we were responsible for the whole

SDLC life-cycle from inception phase to delivery.

http://www.nab.com.au/business/small-business/accounting-package-inte

gration

NAB became the first bank to have automated transaction feeds

and sped up the loan process from 14 days to 2 days.

http://www.smh.com.au/business/banking-and-finance/nab-joins-with-xer

o-to-speed-up-business-loan-approvals-20151017-gkbtjx.html

https://developer.nab.com.au/

Client NAB (July 2014 – November 2014)

Project NextGen - MyTracker

Technology AngularJs

Project Outline Building the front-end for Oracle Banking Platform.

Client Australia Post (March 2014 – July 2014)

Project Enterprise Cloud Platform (ECP) Migration

Technology Spring boot

Project Outline Migration of application from Hostworks to Amazon Cloud.

Java Developer at SecurePay November 2013 – March 2014

Project Post Billpay Migration

Technology Groovy, Spring Security, Spring MVC, Glassfish, jQuery, SVN

Project Outline Post Billpay is a comprehensive bill payment service offered by

Australia Post. After SecurePay was bought by Australia Post they

are moving all the payments to use the existing SecurePay

infrastructure including online payments, IVR and operator-assisted

payments.

Achievements Key contributions include:

- Generating transaction reports for Australia Post accounts team.
- Integrating the payment gateways to online, IVR
- Implementing SecurePay intranet solution for operator-assisted payments.

Team Lead at Australia Post October 2012 – September 2013

Project FlexiPOS EFT Banking

Technology Groovy, Grails, Spring Security, Selenium, JMS, jQuery, Quartz,

Weblogic, SVN

Project Outline FlexiPOS is an existing POS solution for low volume outlets which

allow bill payments, article scanning, and postage assessments. The lack of card payment meant outlets were only allowed to accept cash or cheque as the only valid form of payment. This project enabled card payments and banking functions such as deposits to be done by

relying on cloud computing solution from Quest.

Achievements Key contributions include:

- Leading the team technically to meet project milestones with minimum defects
- Integrating outlets with pin pad to Commonwealth Bank using Javascript OCX wrapper and third party cloud solution from Quest
- Integrating backend of FlexiPOS with Javascript wrapper using domain-driven design
- Scoping out the user story requirements
- Leading and assisting the implementation of the solution

Project My Deliveries

Technology Java, Spring Webflow, Spring Security, jQuery, Quartz, maven,

Tomcat, SVN

Project Outline My Deliveries allows users to have more control over how their

parcels are delivered. The user can track and manage their parcel over

the internet and even redirect their parcel.

Achievements Key contributions include:

 Architecting and refactoring so dependencies in existing PCMS Webservice, SOAP and CMM do not conflict

Integrating with Shipping API and Product API

• Redesigning the Quartz jobs with concurrency

• Involved in all aspects of SDLC including domain modelling to release management to testing

Project PCMS

Technology Java, EJB, Struts, Java Applet, Maven

Project Outline PCMS manages parcel contracts between Australia Post and vendors.

It is one of the biggest revenue making application for Australia Post.

Achievements Key contributions include:

• Implementing Returns functionality to PCMS

• Involved in domain modelling to UI implementation

Senior Software Engineer/Consultant at DiUS October 2011 – October 2012

Client Australia Post

Project Australia Post Digital Mailbox

Technology Groovy, Gradle, Cucumber JVM, Jenkins

Project Outline Australia Post Digital Mailbox is a free personal management app to

help you stay on top of things. Unlike traditional email or the Internet, the digital delivery service is highly secure that you can access anytime, anywhere, on your favourite device. Read and print your mail, set reminders, pay bills and store important documents

such as tax records, a copy of your passport or anything else you would like to be able to securely access from anywhere.

Achievements

Key contributions include:

- Designed and implemented testing framework using Gradle and cucumber
- Regression testing against third party API
- Implemented scenarios in cucumber

Client Percepscion

Project Percepscion PowerVu

Technology Javascript, LESS (CSS Styling Framework), Jenkins

Project Outline Percepscion PowerVu engages with the electricity consumer by

displaying not only raw consumption and pricing information but also a graphic view of how the user's consumption and cost compared with their historical usage and their target usage. PowerVu has been designed from the ground up to show the consumers that electricity

usage information they need when they need it.

Achievements Key contributions include:

 Designed and implemented the web application purely using Javascript on hardware that had a 200KB disk constraint

• Regression testing against third party API

Client Jemena AMI

Project AMI Customer Portal

Technology Grails, Cucumber, Git, jQuery, Javascript, Eclipse, Oracle 10g, JUnit,

Spring Security, Jenkins

Project Outline In 2007, the Victorian Government mandated that AMI meters be

installed for households across the state. The AMI Customer Portal allows consumers to view and analyse their historical electricity consumption data online within hours of use and to bind display devices (called In-Home Displays or IHDs) to their meters to allow them to view their real-time electricity consumption. It also allows

customers to register their details so that they can be notified by SMS or email when power outages and restorations occur in their area.

Achievements

Key contributions include:

- Involved in all aspects of SDLC including domain modelling to release management to testing
- UI design
- Using Behaviour Driven Development (BDD) with Cucumber
- Using Test-Driven Development (TDD) with JUnit

Client Taylor Ventures

Project Taylor

Technology Ruby on Rails 3.1, Titanium, Javascript, Jasmine, Git, Jenkins,

Cucumber

Project Outline Taylor is an event discovery iPhone application that has been driven

and funded by the creative talents of Melbourne's entertainment community. It houses many events that can be discovered in an easy and friendly way based on where you are, what you've attended before when you are searching and what you like. Taylor is a native iPhone application built on top of the Titanium framework. It communicates with a Ruby on Rails server via JSON requests.

Achievements

Key contributions include:

- Development with MVC architecture with Titanium
- Using TDD to build the client and server

Client Open Universities Australia (OUA)

Project OUA Career Advisor

Technology Grails, Cucumber, Git, jQuery, Lucene, Eclipse, Oracle 10g, Jenkins

Project Outline Career advisor is an initiative taken by OUA to assist potential

students in preparing for distance education and to explore career options. Potential students can assess themselves on the study paths they should take by answering questionnaires based on their interests

and previous studies. This was a medium/small scope project using agile methodologies by three developers and one business analyst.

Achievements

Key contributions include:

- Quickly ramping up using Grails
- Using Behaviour Driven Development (BDD) with Cucumber
- Using TDD (Test-driven development)
- Using DDD (Domain-driven design)

Software Engineer at Alchemy Group Limited November 2008 – July 2011

- Involved in all aspects of the SDLC from requirements gathering to testing
- Involved in many big enterprise projects including Assembly School Management System (SMS) and NZSki
- Attend daily standup meeting, weekly scrum retrospective and iteration planning and provide feedback to project manager
- Design screen mockup for student management system Assembly SMS (http://www.assembly-sms.co.nz)
- Domain-driven design OO models for the education industry using JPA 2 (EclipseLink implementation) backed by PostgreSQL following New Zealand Ministry of Education specifications
- Domain-driven design OO models for the accounting module for student management software
- All implementation backed by test-driven development at all levels including unit, integration and acceptance level
- Implement Assembly SMS frontend UI using JSF, Facelets, Richfaces, Javascript, and JQuery and JQuery plugins inside Tomcat container
- Implement JSF, and Richfaces UI components

- Custom styling Richfaces component with CSS
- Implement print media CSS appropriate for report printing
- Contributed to the design and implementation of a testing framework using Selenium RC
- Some experience in developing applications with ETL and OLAP using kettle and JasperReport
- Wrote SQL scripts to refactor database when the domain model changed with DB Deploy
- Wrote SQL scripts to manually manipulate data where the domain model restricted changes via code
- Performance testing on Assembly to identify potential performance issues with JMeter
- Communicate with stakeholders of www.nzski.com to gather requirements
- Design and implement backend OO models for www.nzski.com using JDO (JPOX implementation) backed by SQL Server
- Cross-browser compatibility testing and optimization for www.nzski.com (IE 7+, Firefox 2+, Safari 4+, Chrome 9+, Opera 9+)
- Domain-driven design OO models for mypass.nzski.com using JPA (EclipseLink implementation) backed by PostgreSQL
- Implement www.nzski.com frontend UI using JSP, Facelets, Struts, JQuery and JQuery plugins inside Tomcat container
- Implement mypass.nzski.com frontend UI using JSF, Facelets, Richfaces, Spring Webflow, Primefaces, JQuery inside Jetty container
- Implement payment gateway for mypass.nzski.com
- Deployment of web applications to staging and production for www.nzski.com and mypass.nzski.com
- Implement security across web applications using Spring Security
- Design and implement remote AJAX authentication API using JSON and Spring Security

 Source control using CVS and SVN with advanced operations such as branching and tagging for release

Web developer at Artworks.net.nz April 2008 – November 2008

- Communicate with clients to gather and document the requirements
- Design and implement backend OO model for financial, eCommerce, inventory management and content management sites using PDO backed by MySQL
- Implement UI using PHP MVC framework with extensive use of JQuery and Javascript
- Implement testing framework with Selenium using Java
- Administer over 600 websites across 8 servers
- Linux server administration for over 600 sites, including email, FTP and DNS
- Implemented payment gateway for over 30 websites
- Setup intranet DNS
- http://www.asianfoodwarehouse.co.nz/
- http://www.scottmachinery.co.nz/
- http://www.ilt.co.nz/
- http://www.creditexpress.co.nz/

Business Owner at Clickserv Limited

- December 2005 April 2008
 - Owner of computer hardware/software provider.
 - Implemented backend pricing system with Java
 - Implemented payment gateway
 - OSCMax customization

• Implemented wireless internet solution for Victoria Hotel Dunedin.

References (On request)