

*Experience***Senior Research Engineer – Social Media Internet Vision Analytics** January 2014 to Present  
**Institute for Infocomm Research, A\*STAR**

- Technical lead for full stack development projects.
- Architected infrastructure for Social Media Monitoring System.
- Conceptualised and developed the [Crowdsourced Sensing System](#) to showcase the institute's visual concept detection capabilities.
- Contributed to the institute's productivity campaign with a mobile marketplace solution to pair odd-job workers with customers based on their location, improving job allocation and fulfilment.

**Senior Software Engineer** July 2013 to December 2013  
**The Stakeholder Company**

- Technical lead for Interactive Stakeholder Relationship Visualisation.
- Core developer for Stakeholder Information Management System.
- Both completed projects were marketed and sold to clients as part of multi-hundred thousand-dollar deals.

**Research Engineer - Data Visualisation and Human-Computer Interaction** August 2010 to June 2013  
**Institute for Infocomm Research, A\*STAR**

- Technical lead for data visualisation and human-computer interaction projects.
- Led projects featured in the media, public events and international conferences.
  - Media: Agence France-Presse, The Straits Times, Channel News Asia, Digital Life, Today Online, Channel 8, Channel U
  - Events: TechFest 2012, X-Periment 2011, Singapore HCI Society Seminar
  - Conferences: WCS 2012, CHI 2012, SEANES 2012, SIGGRAPH 2011, VRCAI 2011
- Collaborated with industry partners and universities to build exploratory human-computer interfaces.
- Mentored university and polytechnic students through internships and final year projects.
- Represented the institute as an inter-school competition judge at [Innovation Design Engineering \(IDE\) 2013](#).
- Integrated Agile software development methodologies to development processes (ScrumMaster certified).

**Technical Lead and Consultant** April 2010 to July 2010  
**LiveMurals Interactive Pte Ltd**

- Consulted start-ups and small-medium enterprises based locally and overseas on interactive installations.
- Introduced motion-sensitive webcam games to the casual gaming community.
- Created the world's first video chat music game – [JABBO Live!](#)

**Software Engineer – Gaming Research and Development** March 2009 to March 2010  
**Atomic Gaming Innovations Pte Ltd**

- Led the first multi-touch project, including directing the hardware and electrical engineering team.
- Developed a GPU-driven multi-touch detection library that is portable across off-the-shelf hardware, enabling rapid prototyping of multi-touch interfaces.
- Implemented a proprietary method to generate truly unpredictable seeds for random number generators (randomness verified and approved by BMM Compliance).
- Designed a multiplayer network library with peer-to-peer networking capabilities.
- Ensured gaming standards compliance with Casino Regulatory Authority of Singapore (CRA) and Gaming Laboratories International (GLI).
- Represented the company as a technologist to meet with potential investors at the Global Gaming Expo (G2E) 2009 in Las Vegas, Nevada.

**Software Engineer – 3D Mining Software** July 2007 to February 2009  
**Maptek Pty Ltd (Australia)**

- Created Smart Snap, a suite of predictive software tools to help clients save time and improve accuracy while drawing in 3D space.
- Introduced features of the Smart Snap suite to clients with an article featured in the company newsletter ([Maptek TechSource](#)).
- Worked with the development team to maintain, extend and research the Vulcan 3D package.
- Planned with the local software coordinator on projects, timeframes and development issues.

## *Education*

### **Bachelor of Commerce**

University of Western Australia  
Majors: Corporate Finance, Investment Finance  
Minor: Financial Accounting

### **Bachelor of Engineering (Honours)**

University of Western Australia  
Major: Information Technology  
Both Completed: 2004

## *Significant Projects*

### **World Cities Summit 2012**

[\(video link\)](#)

- Led development of three visualisation showcases at World Cities Summit 2012.
- Demonstrated at Institute for Infocomm Research's TechFest 2012.
- Featured on [The Straits Times](#), [Digital Life](#), [Channel NewsAsia](#), Channel 8, and Channel U.

### **Interactive Stakeholder Relationship Visualisation**

[\(video link\)](#)

- iPad application that enables high profile clients to visually discover key stakeholders before and during operations setup in a foreign country.
- Improved efficiency of clients' business development teams to build relationships with relevant decision-makers, ensuring project success.

### **"Fix This Please!"**

- Social network inspired cross-platform mobile application for reporting infrastructure issues in a country, enabling real-time feedback and response from relevant agencies.
- Influenced the application concept towards raising enforcement efficiency and productivity by enabling increased accuracy of resource allocation and planning by relevant agencies.

### **Multi-touch Interface**

[\(video link\)](#)

- Vision-based multi-touch surfaces built from the ground up for research, natural interface prototyping, and usability studies.
- Featured on Agence France-Presse, [Today Online](#), and in A\*STAR's STARhome.

### **Silhouette Interaction**

[\(video link\)](#)

- Large-screen system that explores real-time interaction techniques using virtual silhouettes.
- Collaborated with Khoo Tech Phuat Hospital to explore the use of this technology for geriatric rehabilitation.
- Demonstrated at Institute for Infocomm Research's TechFest 2012.
- Presented in publications accepted at international conferences (CHI 2012, SIGGRAPH 2011)

### **Head Mounted Display Interaction Interface**

[\(video link\)](#)

- Gesture-based interface for interacting with augmented reality objects shown on a head-mounted display.
- Presented in publications accepted at international conferences (SEANES 2012, VRCAI 2011)

### **Webcam Interaction**

[\(video link\)](#)

- Browser-based webcam-interactive applications created to push the boundaries of mainstream human-computer interactivity.
- Developed interactive installations for Milo, Vanish Stain Remover, and [Broadway Shopping Centre, Sydney](#).

## *Skills*

### **Programming Languages**

- C++, C#, Objective C, MQL4, Matlab, Python, JavaScript, CSS, ActionScript 3.0, PHP, SQL, XML, JSON, CUDA

### **Programming Frameworks / APIs**

- ALGLIB, Orange Data Mining Toolbox, MetaTrader 4, PhoneGap, Node.js, Socket.IO, jQuery, Android SDK, iOS SDK, Facebook API, Wowza Media Server

### **Others**

- Agile Development Methodologies, Data Visualisation, Human-Computer Interaction, Machine Learning