

*I am a scientific researcher who has recently transitioned into web development. I enjoy programming, maths, technology, and interesting problems, but I'm particularly interested in how data and ideas are visualised and presented.*

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Melbourne, Australia

## Computational neuroscience

My background is in engineering and mathematics, and in applying approaches from these fields to neuroscience research. I develop mathematical models of how neurons, and networks of neurons, behave in the brain. At IBM Research, I focus on neurons in the retina, in order to develop treatments for degenerative blindness.

## Full-stack web development

I am a self-taught web developer who is now applying these skills at IBM Research to build web-enabled scientific research tools, which are visualised in a browser and powered by cloud computing and storage resources.

I have presented this work at international JavaScript conferences, including:

**JSConfBP:** Budapest (May 12, 2016)  
<https://www.youtube.com/watch?v=mz4N3U5f2tg>

**RejectJS:** Berlin (Sept 24, 2015)  
<https://www.youtube.com/watch?v=fq2IFFK08Ik>

As part of this work, **I'm currently using:** React, Redux/Flux, D3.js, Three.js, Node.js, PostgreSQL, CouchDB, Bash, Python, Docker, Openstack, C++ and Git.

**I've previously used:** Ruby on Rails and AngularJS.

**I want to try out:** Mobx, GraphQL, Relay and Ansible.

## Community

I teach web development and D3.js, using course notes which I co-developed:

**D3.js course:** <http://isakiko.github.io/D3-visualising-data/>

I am becoming involved in organising Decompress, a community focused hack-day following CSSConfAU and JSConfAU in Nov/Dec:

**Decompress:** <http://2016.decompress.com.au/>

## Other skills and interests

**I have a lot of experience in:** mathematical modelling, scientific analysis, data visualisation and teaching myself new languages, technologies, and frameworks.

**I have some experience but want more in:** machine learning, functional programming, visual design, UX design and commercial software development.

## Dual Bachelor Degree 02/05 - 11/09

University of Queensland

Mechanical Engineering and Mathematics

**GPA:** 6.98 (1 is lowest, 7 is highest)

## Student Engineer 03/07 - 05/09

Veitch Lister Consulting

Developed new capabilities for in-house, city-wide, transportation forecasting software

## Research Assistant 06/09 - 06/10

Queensland Brain Institute

Analysed microscope images of neurons during development

## PhD Candidate 07/10 - 01/14

University of Melbourne, Department of Electrical & Electronic Engineering  
Computational Neuroscience

**Title:** "Mathematical Modelling of Brain Networks: From Synaptic Plasticity to Behaviour"

**Supervisors:** Prof. Anthony N. Burkitt, Prof. David B. Grayden, Prof. Doreen A. Thomas

## Postdoctoral Researcher 02/14 - 01/16

IBM Research Australia

Collaborating with university researchers on projects around the bionic eye, retinal degeneration, and epilepsy

## Research Staff Member 02/16 - now

IBM Research Australia

Leading the neural modelling research and demonstrating how web technologies can transform scientific research