David Ma

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PROFILE

Studied Bioinformatics at the University of New South Wales.
Specialising in Data Visualisation, User Experience and Community.

EXPERIENCE

- 2013 - 2015
  Developer with the O'Donoghue Lab at the Garvan Institute on the Minardo project (http://minardo.org/), a continuation of my undergraduate thesis (see below). I worked with a graphic designer and biologist to produce a Cell Snapshot (see publications), a webpage diagram of the Insulin Signaling pathway using d3.js to tie data to an SVG prepared in Adobe Illustrator by the graphic designer.
- 2013
  Bioinformatics undergraduate thesis at UNSW designing and implementing a bespoke user interface for the purpose of displaying time series mass spectrometry data projected onto the insulin signaling pathway, targeting the specific needs of researchers in the Garvan Institute of Medical Research, with the long term goal of generalisability to other datasets and research needs. (http://minardo.org/)
- 2013
  Internship with the O'Donoghue Lab at the CSIRO on the Aquaria project (http://aquaria.ws/) under Dr. Sean O'Donoghue. Worked in web development, design and data visualisation.
- 2014 - Current
  Scientific Outreach — Organised large reddit AMAs (online question and answer sessions) for scientists and data visualisers with Reddit's /r/Science and /r/DataIsBeautiful communities.
- 2012 - Current
  Online Crowd Management — Managed a large online community of over 250,000 subscribers for 36 months, including designing the web layout of the forum and increasing intra-community-participation.
- 2013 - Current
  Online Event Management — Organised 4 international photography competitions, balancing sponsorship, prizes, promotion and the legal rights of the photographers and their photos. (http://redditphotography.com/bestof2014.html)

COMPUTER LANGUAGES & TECHNICAL SKILLS

HTML, Javascript, CSS, Wireframing, AWS, Node.js, Bash, SQL, D3.js, JQuery, Tableau

PUBLICATIONS

SnapShot: Insulin/IGF1 Signaling — An interactive visualisation of the insulin signaling pathway.

Ma, David KG, Christian Stolte, James R. Krycer, David E. James, and Seán I. O'Donoghue. "SnapShot: Insulin/IGF1 Signaling." *Cell* 161, no. 4 (2015): 948-948.

Visual Analytics of Signalling Pathways Using Time Profiles — A textbook chapter on the application of visual design techniques to better present data, specifically time series proteomics data.

DKG Ma, C Stolte, S Kaur, M Bain, and SI O'Donoghue. In Sun C, T Bednarz, TD Pham, P Vallotton, D Wang, eds. Signal and Image Analysis for Biomedical and Life Sciences. Switzerland: Springer, 2014;3-22.

Visual analytics of the insulin signalling pathway using phosphorylation time profiles — Conference proceedings, detailing a new solution to visualising high dimension network graphs.

DKG Ma, C Stolte, S Kaur, M Bain, and SI O'Donoghue. In Proceedings of the 2013 International Symposium on Computational Models for Life Sciences (CMLS-13), Sydney, Australia. AIP Conference Proceedings 1559, 185-96.

AWARDS

The Minardo project was part of Biocode, a finalist entry for the **2015 Eureka Prize for Excellence in Interdisciplinary Scientific Research**.

EDUCATION

Trinity Grammar School — International Baccalaureate, 2006
University of New South Wales, Sydney, NSW — Bachelor of Engineering (Bioinformatics)

- Computing — Studied computer programming, algorithms, databases, software construction, engineering design in computing, advanced algorithms and programming technology, software project management and human computer interfaces.
- Bioinformatics — Studied bioinformatics, advanced bioinformatics, bioinformatics algorithms, biomedical research ethics.
- Mathematics — Studied calculus, algebra, statistics, discrete mathematics.
- Biology — Studied biology, biochemistry, molecular biology, microbiology, genetics, physiology, advanced genetics, and biotechnology.
- Chemistry — Studied chemistry, advanced chemistry.
- Biomedical Engineering — Studied engineering in medicine, clinical laboratory science, introductory polymer chemistry, implantable bionics.

REFERENCES

Dr. Sean O'Donoghue (OCE Science Leader, CSIRO) — sean.odonoghue@csiro.au
Dr. Michael Bain (Senior Lecturer, UNSW) — mike@cse.unsw.edu.au
Katherine Cheng (Partner Manager, SmugMug) — katherine@smugmug.com