



YI-LING HWONG 方奕羚

Researcher and Data Scientist

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PROFILE

Engineer and data scientist passionate about leveraging the power of **data and digital technologies** to improve the public's understanding of science. Experienced researcher with extensive **international experience** working in multi-disciplinary teams. Previously a member of the CMS detector of the Large Hadron Collider experiment at **CERN**. Active participant in **science communication** initiatives both professionally and on a voluntary capacity.

PROFESSIONAL EXPERIENCE

PhD Candidate, University of New South Wales

Sydney, Australia • June 2015 – current

- Research topic: an empirical study of the processes & outcomes of social media science communication using machine learning

Educator, ThinkSpace at Powerhouse Museum

Sydney, Australia • Jan 2016 – current

- Teach computer programming (Python, C#), game design (Unity, Minecraft) and physical computing (Arduino, Raspberry Pi) to kids between the ages of 7 and 12

Communications Officer, Evolve Housing (Non-profit)

Sydney, Australia • Aug 2014 – May 2015

- Manage company's digital and social media presence
- Inform company's communications strategy using data analytics
- Produce materials to communicate company's vision & mission

Online Communication Officer, Doctors Without Borders

Geneva, Switzerland • Jun 2012 – Apr 2014

- Manage movement international website at www.msf.org
- Technical lead for website migration and redesign project
- Website visitors increased by over 60% after relaunch.
- Administer CMS platform built on Drupal multisite installation
- Launch and manage MSF International Twitter account (@msf)

Co-founder, COSNES Sarl

Geneva, Switzerland • Dec 2011 – May 2014

- Specialise in digital and IT services for individuals and SMEs
- Product manager and technical lead for www.fixonaut.com

Science Communicator, CERN (European Organisation for Nuclear Research)

Geneva, Switzerland • May 2011 – May 2012

- Produce content for lay-consumption on CERN's public websites
- Website design and management (Drupal)

SPECIALTIES

- ❖ Machine learning
- ❖ Science communication
- ❖ Digital strategies
- ❖ Front-end design
- ❖ Data analytics
- ❖ Content development

EDUCATION

Master of Engineering, M.Eng in Power Engineering

University of Applied Sciences
Karlsruhe, Germany

- Final grade: 1,4
(equivalent to Australian
High Distinction)

SKILLS

Coding languages: HTML, CSS, Python

Data science: SciKit learn, MatLab, NLTK

Content Management Systems: Drupal, Wordpress

Database: MySQL, MongoDB

OS: Windows, Linux, Mac

Version Control: SVN, Git

Project Management (SaaS): JIRA, Basecamp, Freedcamp

Others: MS Office Suite, Adobe Photoshop, Adobe InDesign

Data Acquisition Engineer, CERN

Geneva, Switzerland • Dec 2008 – May 2011

- Marie Curie Fellowship Program funded by the EU
- Develop an Analysis Toolkit of Finite State Machines for the CMS Detector Control System
- CMS is one of the two experiments that first detected the Higgs Boson, which won its discoverer a Nobel Prize in Physics

Technical Student, CERN

Geneva, Switzerland • Mar 2008 – Aug 2008

- Completion of Master Thesis
- Thesis title: Development of the Control System for A Liquid Helium Production Plant for the Large Hadron Collider Experiment. Final grade: 1,0 (*very good*)

Intern, Siemens Corporation

Karlsruhe, Germany • Sep 2007 – Feb 2008

- Development, configuration, test and specification of burglar alarm system (Multi-Partition-Keypad)
- Programming of Philips LPC213x Microcontroller (C/C++)

Intern, Siemens Corporation

Karlsruhe, Germany • Sep 2005 – Feb 2006

- Worked in Siemens Building Technology (SBT), Electronic factory (EWK), Process Instrumentation and Analytics (PI&AS)
- Production of switchbox for video and audio crossbar
- Basic mechanical and electrical skills

SPEAKING & OUTREACH

- **December 2016:** Abstract accepted and oral presentation at the American Geophysical Union (AGU) Fall Meeting in San Francisco, USA
- **August 2016:** Speaker at the Sydney Science Festival “Why Engineers Rule the Universe”, speaking on the Large Hadron Collider project at CERN
- **August 2016:** Expert guide for the “Collider” exhibition at the Museum of Applied Arts and Science in Sydney, Australia
- **July 2016:** Abstract accepted and oral presentation at the Australasian Astrobiology Meeting in Perth, Australia
- **April 2016:** Oral presentation at MSCA-IF seminar to Malaysian students as the European Commission’s Marie Curie fellow alumni
- **July 2012:** Panel speaker for the Partnership Symposium on EU-ASEAN Science, Technology and Innovation Cooperation at ESOF2012 in Dublin, Ireland
- **Sep 2011:** Invited speaker for session “Mobility of researchers in Europe: an endeavour for all” at the European Association for International Education (EAIE) conference in Copenhagen, Denmark (YouTube link: http://youtu.be/X9VXkx1_azk)

LANGUAGES

- ❖ **Mandarin** (Mother tongue)
- ❖ **English** (Expert user: IELTS Band 9)
- ❖ **German** (Proficient; DSH grade 1,6 – very good)
- ❖ **Malay** (Proficient)
- ❖ **Cantonese & Hokkien** (Proficient)
- ❖ **French** (Basic user)

PUBLICATIONS

Journals (with refereeing) and conference contributions

- ❖ [What makes you tick? The psychology of social media engagement in space science communication](#), Computers in Human Behavior, Volume 68, pp. 480–492
- ❖ [Analysing the Control Software of the Compact Muon Solenoid Experiment at the Large Hadron Collider](#) In F. Arbab, M. Sirjani (eds.), Fundamentals of Software Engineering - 4th IPM International Conference, FSEN 2011, Lecture Notes in Computer Science 7141, pp. 174–189.
- ❖ [Formalising and analysing the control software of the Compact Muon Solenoid Experiment at the Large Hadron Collider](#). Science of Computer Programming, Science of Computer Programming, volume 78, number 12, 2013, pages 2435-2452.
- ❖ [An Analysis of the Control Hierarchy Modelling of the CMS Detector Control System](#). Journal of Physics: Conference Series, 396(5) (2012).
- ❖ [Analysis of the Control Hierarchy Modelling of the CMS Detector Control System](#), in ICALEPCS 2009, Kobe, Japan.

For a mostly complete list of my other articles please refer:
www.yiling-hwong.com/projects/writing/

HONOURS & AWARDS

- **January 2017:** Winner of Outstanding Student Presentation Award (OSPA) at the American Geophysical Union (AGU) Fall Meeting
- **December 2016:** Winner of the American Geophysical Union (AGU) Fall Meeting Student Travel Grant
- **Apr 2016:** Recipient of the Palaeontology, Geobiology and Earth Archives (PANGEA) Research Centre grant
- **Mar 2016:** Toastmasters International Speech Contest club level – First Prize winner; Area level – Second Prize winner
- **Aug 2012:** European Commission Marie Curie prize in Communicating Science – Finalist
- **Apr 2011:** Winner of honorable mention award at Fundamentals of Software Engineering (FSEN) conference in Tehran, Iran
- **2009 – 2011:** Marie Curie Fellowship awarded by the European Commission under the 7th Framework Programme
- **2004 – 2008:** The Malaysian Public Service (JPA) Scholarship

INTERESTS

Science, music, literature, entrepreneurship, travelling, salsa dancing

REFEREES

Dr. Carol Oliver

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carol.oliver@unsw.edu.au

Jody Gould

+61 411 899 492

jody.gould@evolvehousing.com.au

VOLUNTEER & INITIATIVES

- ❖ Vice President of Education of the Community Speaker Toastmasters Club, Sydney, Australia (July 2016 – current)
- ❖ Vice President of Membership of the Community Speaker Toastmasters Club, Sydney, Australia (July 2015 – July 2016)
- ❖ Editor in Chief (Jan 2015 – current), editor and columnist (Oct 2011 – Jan 2015) of [Scientific Malaysian magazine](#)
- ❖ Managing team for student resources - LHC Physics Centre at CERN (LPCC) (2010 – 2012)
- ❖ Nominee – UN Volunteer Online Volunteering Award 2010 (RESPECT Refugee e-zine)
- ❖ Co-founder and Vice President of CERN Student Club (2009 – 2012)
- ❖ Program director of the 3rd annual national singing competition (*Ka-Show*) in Karlsruhe, Germany (2007)
- ❖ Editor in Chief of the Penang Chinese Girls High School graduation magazine (2000)
- ❖ Performer's Certificate in solo piano from the Trinity College London (1997)
- ❖ Participant of the Kumamoto International Music Festival in Japan (1996)
- ❖ Malaysia's representative (viola) at the 4th ASEAN Youth Music Workshop in Bangkok, Thailand (1996)
- ❖ Member of the Penang Symphony Orchestra, Malaysia (1992 – 2003)

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