DR KELVIN KA YIN WONG

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Google Scholar: https://scholar.google.com/citations?user=6CqhqzgAAAAJ

Personal information

Full name	Kelvin Ka Yin Wong, BSc MSc MRes EngD FRGS CGeog(GIS)
Current appointment	Senior Product Manager, Risk Management Solutions (RMS)
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Citizenship	British, Hong Kong

Experience

Mar 2020 – Present	Senior Product Manager, Risk Management Solutions (RMS)
Nov 2018 – Nov 2019	Japan Society for the Promotion of Science (JSPS) Postdoctoral Research Fellow, University of Tokyo, Japan
May 2018 – Aug 2018	GIS consultant (contract), Department for Transport, UK
May 2018 – Oct 2018	Researcher – 3D GeoBIM, EuroSDR, UK
May 2018 – Oct 2018	Researcher – Open3D project, University College London, UK
Sep 2017 – Apr 2018	Module coordinator, University College London, UK
Oct 2013 – Apr 2018	Postgraduate teaching assistant, University College London, UK

Oct 2014 – Dec 2015   Researcher - Economic value of 3D Geographic Information, EuroSDR, UK

Jan 2013 – Sep 2013   GIS Analyst, WSP Group, UK

Education

Sep 2014 – Apr 2018   Engineering Doctorate (EngD) in 3D Geographic Information Science
                        (Examined 09 Apr 2018)
                        University College London, UK.

                        Thesis title: Towards a National 3D Mapping Product for Great Britain

Sep 2013 – Sep 2014   Master of Research (MRes) in Virtual Environments, Imaging & Visualisation
                        (Distinction)
                        University College London, UK

Sep 2011 – Sep 2012   Master of Science (MSc) in Geographic Information Science (Distinction)
                        University College London, UK.

Jan 2010 – April 2010   Second Year Exchange Program
                        University of York, Canada.

Sep 2008 – Jul 2011   Bachelor of Science (BSc) in Geography (2:1)
                        University of Southampton, UK.

Accreditations and Memberships

Chartered Geographer (GIS)

Royal Geographical Society (with IBG). Accredited September 2020.

Fellow of the Royal Geographical Society

September 2020

Member of the Data Visualization Society

March 2020

Awards, honours, and distinctions

2019	2019 IEEE 8th Global Conference on Consumer Electronics Excellent Paper Award - Bronze Prize
	Paper: Classifying Human Activity and Smartphone Holding Mode Using Accelerometer and Gyroscope
2018	UCL Student Choice Awards – Exceptional Feedback (Nominated), University College London, 2018.
	This award honours member of staff who provides constructive, useful feedback on students' assessment and learning, helping them to progress and succeed.
2012	Hart Prize 2011/2012.
	Awarded for most distinguished performance in the course by the Head of Department of Civil, Environmental and Geomatic Engineering.

Research income and grants

This following section provides a summary of research income to date which totals £121,910.

2018	**Japan Society for the Promotion of Science** **Postdoctoral Fellowship for Research in Japan (short-term)** **¥5,384,000 (£41,550)**
	The program provides PhD students or PhD researchers in the Europe and North America with opportunities to conduct collaborative research under the guidance of their hosts in universities and other Japanese institutions.
2017	**University College London** **UCL Centre VEIV Advance Scholarship** **£4,500**
	The UCL Center VEIV Advance Scholarships support three months' work in writing and submitting a research proposal or business plan relating directly to VEIV themes.
2015	**EuroSDR** **Economic value of 3D study** **€2,000 (£1,500)**
	The 3D Special Interest Group of EuroSDR launched a project to identify "the economic value of 3D data for National Mapping Agencies (NMAs). The project is unique because it is funded through "crowdfunding": eleven National Mapping Agencies (NMAs) and EuroSDR (represented by Jantien

Stoter) as 12th partner each contribute financially. This funding covered an initial scoping study on the economic value of 3D.

2013	**The Engineering and Physical Sciences Research Council (EPSRC) Engineering Doctorate Studentship Award - Developing a New 3D Dataset with the Ordnance Survey**
	£74,360 + travel support budget
	The award provides a tax-free stipend of £18,590 per annum for four years, plus support for travel and research.

Refereed academic journals

2020	Wong, K., Gu, Y., and Kamijo, S., 2020. Mapping for Autonomous Driving: Opportunities and Challenges. IEEE Intelligent Transportation Systems Magazine (ITSM). URL: https://doi.org/10.1109/MITS.2020.3014152
2019	Wong, K., Javanmardi, E., Javanmardi, M. and Kamijo, S., 2019. Estimating Autonomous Vehicle Localization Error Using 2D Geographic Information. ISPRS International Journal of Geo-Information, 8(6), p.288. URL: https://doi.org/10.3390/ijgi8060288. **Open Access**
2018	Wong, K. and Ellul, C., 2018. User Requirements Gathering for a National 3D Mapping Product in the United Kingdom. ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences, Volume IV-4/W6. URL: https://doi.org/10.5194/isprs-annals-IV-4-W6-89-2018. **Open Access**
2017	Wong, K. and Ellul, C., 2017. User Requirements Gathering for 3D Geographic Information in the United Kingdom. ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences. IV-4/W5, 125-132. URL: https://doi.org/10.5194/isprs-annals-IV-4-W5-125-2017. **Open Access**
	Wong, K. and Ellul, C., 2017. Assessing the Suitability of Using Google Glass in Designing 3D Geographic Information for Navigation. In Advances in 3D Geoinformation (pp. 409-422). Springer International Publishing. URL: https://doi.org/10.1007/978-3-319-25691-7_23.
2016	Wong, K. and Ellul, C., 2016. Using Geometry-Based Metrics as Part of Fitness-for-Purpose Evaluations of 3D City Models. ISPRS Annals of Photogrammetry, Remote Sensing and Spatial Information Sciences, pp.129-136. URL: https://doi.org/10.5194/isprs-annals-IV-2-W1-129-2016 **Open Access**

Industry reports

| 2015 | Wong, K.K.Y., 2015. Economic Value of 3D Geographic Information. EuroSDR and the Department of Computer Science, University College London, London, UK. URL: https://tinyurl.com/valueof3D |

Ellul, C. and Wong, K., 2015. Advances in 3DGIS, AGI foresight report 2020, the Association of Geographic Information. URL: https://www.agi.org.uk/news/foresight-report

Theses

EngD   Wong, K., 2018. Towards a National 3D Mapping Product for Great Britain. EngD thesis, University College London.
https://discovery.ucl.ac.uk/id/eprint/10047505/

MRes   Wong, K., 2014. Designing 3D Geographic Information for Navigation Using Google Glass. MRes thesis, University College London.

MSc   Wong, K. 2012. Enhancing Positioning of Photovoltaic Panels Using 3D Geographic Information. MSc thesis, University College London.

BSc   Wong, K., 2011. Assessing Photovoltaic Potential in Hawaii. BSc thesis, University of Southampton

Participation in Conferences and Professional Meetings

Conferences

2020   Wong, K., Ellul, C., Morley, J., Home, R., and Kalantari, M., 2020. 3rd BIM/GIS Integration Workshop and 15th 3DGeoInfo Conference 2020 - Preface. ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences, Volume VI-4/W1-2020, 1–1, https://doi.org/10.5194/isprs-annals-VI-4-W1-2020-1-2020

Wong, K., Ellul, C., Morley, J., Home, R., and Kalantari, M., 2020. 3rd BIM/GIS Integration Workshop and 15th 3DGeoInfo Conference 2020 - Preface. The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, Volume XLIV-4/W1-2020, 1–1, https://doi.org/10.5194/isprs-archives-XLIV-4-W1-2020-1-2020

2019   Withanawasam, J., Javanmardi, E., Wong, K., Javanmardi, M., and Kamijo, S., 2019. Road scene risk perception for intelligent vehicles using end-to-end affordance learning and visual reasoning. In the 5th Asian Conference on Pattern Recognition (ACPR 2019), Auckland, New Zealand. https://doi.org/10.1007/978-3-030-41404-7_60

Wong, K., Javanmardi, E., Javanmardi, M., Gu, Y. and Kamijo, S., 2019. Evaluating the Capability of OpenStreetMap for Estimating Vehicle Localization Error. In 2019 IEEE 22nd International Conference on Intelligent

Transportation Systems (ITSC), Auckland, New Zealand.
https://doi.org/10.1109/ITSC.2019.8917182

Motani, K., Wong, K. and Kamijo, S., 2019. Classifying Human Activity and Smartphone Holding Mode Using Accelerometer and Gyroscope. In 2019 IEEE 8th Global Conference on Consumer Electronics (GCCE), Osaka, Japan. **Excellent Paper Award - Bronze Prize** http://www.ieee-gcce.org/2019/awards.html

| 2018 | Wong, K. and Ellul, C., 2018. User Requirements Gathering for a National 3D Mapping Product in the United Kingdom. 13th 3D Geoinfo Conference 2018, 1-2 October 2018, Delft, The Netherlands. |

Metcalfe, J., Ellul, C. and Wong, K. 2018. Towards 4D City Models: Integrating Real Time Sensor Data into a 3D Web GIS. In Proceedings of the 26th GIS Research UK (GISRUK) Conference, Leicester, UK.

2017   Wong, K. and Ellul, C., 2017. User Requirements Gathering for 3D Geographic Information in the United Kingdom. 12th 3D Geoinfo Conference 2017, 26–27 October 2017, Melbourne, Australia.

Wong, K. and Ellul, C., 2017. Investigating the use of the Euler characteristic as part of fitness-for-purpose assessment of 3D city models. In Proceedings of the 25th GIS Research UK (GISRUK) Conference, Manchester, UK.

2016   Wong, K. and Ellul, C., 2016. Using Geometry-Based Metrics as Part of Fitness-for-Purpose Evaluations of 3D City Models. 11th 3D Geoinfo Conference 2016, 20–21 October 2016, Athens, Greece.

2015   Wong, K. and Ellul, C., 2015. Assessing the Suitability of Using Google Glass in Designing 3D Geographic Information for Navigation. 10th 3D Geoinfo Conference 2016, 28–30 October 2015, Kuala Lumpur, Malaysia.

Wong, K.K.Y. and Ellul, C., 2015. Designing 3D geographic information for navigation using google glass. In Proceedings of the 23rd GIS Research UK (GISRUK) Conference, Leeds, UK (pp. 15-17).

Milner, J., Wong, K. and Ellul, C., 2014. Beyond Visualisation in 3D GIS. In Proceedings of the 23rd GIS Research UK (GISRUK) Conference, Leeds, UK.

2013   Wong, K. and Ellul, C., 2013. Enhancing positioning of photovoltaic panels using 3D geographic information. In Proceedings of the 21st GIS Research UK (GISRUK) Conference, Liverpool, UK.

Invited Presentations, Panels or Keynotes at Research and Professional Seminars, Conferences and Workshops

All invited talks are single author unless specified; and conference keynotes, panels and workshops are indicated.

2019	**Talk:** Mapping for Autonomous Driving: Opportunities and Challenges. Geospatial Seminar Series. University College London. London, UK.
2017	**Workshop:** Introduction 3D GIS and BIM 2017 (1-day event), British Computer Society and Association for Geographic Information. University College London. London, UK.
	Talk: Manipulating, Querying and Quantifying 3D Geographic Information Using the Oracle Spatial Java API, UK Oracle User Group Spatial & Graph SIG. London, UK.
2016	**Workshop:** 3D GIS Workshop and Tutorial - GISRUK '16. GIS Research UK, University of Greenwich. London, UK.
	Talk: What is 3D GIS? Talks for Undergraduates Geomatic Students from University of Applied Sciences and Arts Northwestern Switzerland. London, UK.
2015	**Panel:** 3D GIS – Is visualisation enough? GeoCom 2015: Resilient Futures, Warwick, UK. https://www.agi.org.uk/about/resources/category/93-geocom-resilient-futures?download=161:geocom-2015-online-event-guide
	Talk: What Should We Map? – 3D GIS for navigation. An evening of 3D GIS, BCS (Location Information Specialist Group) & AGI (UK3DSIG). British Computer Society, London, UK. https://www.agi.org.uk/component/civicrm/?task=civicrm/event/info&Itemid=242
	Workshop: 3D GIS Workshop and Tutorial - GISRUK '15. GIS Research UK, University of Leeds. Leeds, UK. http://leeds.gisruk.org/workshops.html#3DGIS
2014	**Talk:** Designing 3D GI for Navigation Using Google Glass. EuroSDR/ISPRS: Workshop for Capturing National Scale 3D Models, Ordnance Survey, Southampton, UK. http://www.eurosdr.net/workshops/efficient-capturing-3d-objects-national-level-focus-buildings-and-infrastructure

Organisational Roles within Professional Societies

- Co-convenor of the UK 3D special interest group, as part of the Association of Geographic Information.

Academic duties

Previously co-supervised students

2019	**Road scene risk perception for intelligent vehicles using deep learning** Jayani Chathurangi Withanawasam PhD Information Science and Technology, University of Tokyo
	Indoor navigation system for elderly people using learning-based visual localization and augmented reality Hettiarachchi Dulmini Priyanwada PhD Emerging Design and Informatics, University of Tokyo.
	Multi-level information extraction for sports video analysis Chen Duyu MA Information Science and Technology, University of Tokyo
	Multi-Functional Driving Data Recorder System with Smartphone Ryō Kawanami MA Emerging Design and Informatics, University of Tokyo.
	Real-time and Stand-alone Indoor Positioning System Using Activity Recognition with Smartphone Kazuki Motani MA Emerging Design and Informatics, University of Tokyo
	Deep learning for depression detection of Twitter users Liu Xue Lun MA Emerging Design and Informatics, University of Tokyo.
	Automatic HD map generation for autonomous vehicles Yuki Endō MA Emerging Design and Informatics, University of Tokyo.
	Human-assisted active learning strategies for autonomous driving systems Tuomas Mäkinen MA Emerging Design and Informatics, University of Tokyo.
2017	**Towards 4D City Models: Integrating Real Time Sensor Data into a 3D Web GIS** Jack Metcalfe MSc Geographic Information Science, University College London.
	Impact of LoD1 versus LoD2 on 3D GIS Analysis Shane Randall MSc Geographic Information Science thesis, University College London.
2016	Identify approaches for improving the accuracy, precision and usability of 3D Mobile Applications

Polly Petrelli
MSc Geographic Information Science, University College London.

2015

Assessing the Suitability of Using CAD, GIS and Gaming Platform on Flood Visualisation
Yuan Yao
MSc Geographic Information Science, University College London.

BBOXX Operations Expansion: Solar Power for Kenya, Rwanda and Uganda
Michael Coombs, Yushi Li, Pernille Ronæss Melleby, Antoine Normand, Hayden Postle-Floyd, Gijs Stapel
MSc Environmental Systems Project, University College London

2014

Beyond Visualisation in 3D GIS
James Milner
MSc Geographic Information Science, University College London.

Rainwater Harvesting in Mexico City (Part II): Developing an online web GIS design and monitoring tool

Linnet Solway, Zeina Hawa, Christina Khayat, Jerome Roussel, Hugo Arevalo-Bacon, Xida Fu
MSc Environmental Systems Project, University College London.

Water Reuse Networks – Increasing Urban Water Resilience (in collaboration with Arup)
Han Sheng, Amalia Ouriachi
MSc Environmental Systems Project, University College London.

2013

Rainwater Harvesting in Mexico City
Maria Agorastoudi, Sophokles Violaris, Xiaohang Sun, Marco Romero Chapa, Olayemi Akinyemi.
MSc Environmental Systems Project, University College London.

Courses taught

2018

Design & Professional Skills 2: GIS (Undergraduate level)
Module co-ordinator and lecturer, with two postgraduate teaching assistants. 12 hours of practicals and preparation, 2 hours of lecture, setting and designing coursework assignment, marking 27 group projects.

CEGEG129 Spatial Databases and Data Management (Postgraduate level)
Postgraduate teaching assistant. 14 hours of practicals, 20 hours of assignment marking.

2017	**Web & Mobile GIS (Postgraduate level)** Lecturer. 4 x 2-hour lectures, teaching Android and Java for mobile spatial applications. **FME Engineering Toolkit (Postgraduate level)** Postgraduate teaching assistant. 2 x 2-hour teaching FME to manipulate GIS and CAD data.
2016	Representations, Structures and Algorithms (Postgraduate level) Lecturer. 3 x 2-hour lectures and assignment marking. **Introduction to Programming (Postgraduate level)** Postgraduate teaching assistant. 10 x 2-hour practicals, teaching Javascript to MSc Digital Humanities students **Design & Professional Skills 2: GIS (Undergraduate level)** Lecturer with two postgraduate teaching assistants. 12 hours of practicals, plus assignment marking.
2015	Representations, Structures and Algorithms (Postgraduate level) Lecturer. 3 x 2-hour lectures and assignment marking. Design & Professional Skills 2: GIS (Undergraduate level) Postgraduate teaching assistant. 12 hours of practicals. **Engineering Toolkit: Year 1 GIS (Undergraduate level)** Postgraduate teaching assistant. 12 hours of practicals. **The Brilliant Club - Autumn Placement - Taming the Bristle Bot KS3 Engineering (High school level)** PhD volunteer tutor. Teaching bright pupils from non-selective state schools. Two full day teaching training sessions, 6 x 1-hour tutorials (six pupils)
2014	**Geomatics II Module (Postgraduate level)** Lecturer. 20 hours of lectures, teaching the basics of ArcGIS & GIS theory to Masters' level students.

Reviewer on Articles Submitted to International Journals and Conferences

- Journal of Spatial Science
- IEEE Sensors Journal
- IEEE Intelligent Transportation Systems Conference
- 3D GeoInfo Conference
- Geographical Information Science Research UK Conference

Professional duties

Conference and seminar organisation

2020

3DGeoInfo Conference 2020 (08-12 September 2020)
University College London, UK.
Local Organising Committee

Geographical Information Science Research UK (GISRUK) 2020: AI and Urban Analytics (21-24 April 2020)
Birkbeck, University of London and University College London, UK.
Programme Committee

Industrial Collaboration and Professional Practice

2018

Ordnance Survey Knowledge Exchange Program.
As part of a knowledge transfer program, a two- day workshop was held at Ordnance Survey in February 2018 to present the results of the Engineering Doctorate and to investigate further potential avenues of research. The work has now been transferred to the 'Business Change and Innovation' and 'Product Development' team for continued refinement.

Department for Transport, Maritime Resilience.
This three-month collaboration was with the Maritime Resilience division of the Department for Transport. The task was to develop a new geographic information mapping system to support maritime resilience decisions and help manage through major disruptions (such as Brexit) in the ports and shipping industry.

EuroSDR – Investigating the state-of-play of GeoBIM in the UK
The general aim of this collaboration was to detail both the needs and issues of GeoBIM integration, studied from use cases as well as from existing experiences. This research forms part of a wider initiative coordinated by EuroSDR.

2015

EuroSDR – Identifying the economic value of 3D geographic information.
This project provided a preliminary assessment of the economic value of 3D geographic information. Through defining what constitutes economic value and examining 3D GI as an economic good, an improved understanding of the most suitable methods in quantifying value can be gained. Assessing the GI sector through the value chain framework provided a better insight into the various value-generating activities and helps us to capture the full value of 3D GI.

Other qualifications and achievements

2008	**Classical Guitar - Grade 8 (Distinction)** Associated Board of the Royal Schools of Music (ABRSM)
2007	Competed at Henley Royal Regatta, The Princess Elizabeth Challenge Cup Tiffin School 1st VIII
2006	**Piano - Grade 5 (Merit)** Associated Board of the Royal Schools of Music (ABRSM)
2005	Winner of 2005 Schools' Head of the River J16 8+ Tiffin School

Other work experience

2017	IT Support (volunteer), Age Concern, Epsom, UK.
2016	PhD Teacher (volunteer), The Brilliant Club, London, UK.
2010	Investment analyst (summer placement), Lloyd George Management, Hong Kong.
2009	Cook, Camp Walden – BUNAC scheme, Michigan, USA.
2008	Investment analyst (summer placement), Lloyd George Management, London, UK.