KURTIS J. GARBUTT

RESEARCH ENGINEER
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I am currently a research assistant working with Prof. Masooda Bano on a social network analysis project in the *Department of International Development* at Oxford University. I am also a postgraduate research engineer working in the *Urban Sustainability & Resilience Centre* (USAR), which is part of the *Department of Civil, Environmental and Geomatic Engineering* (CEGE) at *University College London* (UCL). My research focus is the modelling of hazards and disaster response using GIS and agent-based modelling. I work with a number of NGOs to facilitate NGO/academic collaboration and research. I have a keen interest in mapping, open source data and the use of technology to aid development work.

EDUCATION

University College London • September 2012 to present
Durham University (Collingwood College) • October 2005 to June 2010

Qualification	Year	Subject	Grade
Engineering Doctorate, EngD	2017	Assessing vulnerability and modelling assistance: using demographic indicators of vulnerability and agent-based modelling to explore emergency management capacity	
Research Masters, MRes	2013	Creation of an open source GIS index to examine UK flood vulnerability and support the BRC's emergency response and preparation work.	Distinction
Masters of Science (Research), MSc	2010	Media, Representation, Persistence & Relief: Media Monitoring of Natural Hazards & Subsequent International Relief Efforts.	Pass
Degree, BSc	2008	Geography BSc (Hons) – Focus on geographical hazards and risks and their social impacts; environmental hazards; political geography.	2:1 (Hons)

EXPERIENCE

Oxford University Department of International Development • Research Assistant • May 2017 to present
- Research Assistant on a 6 month project examining social media networks of isolation and integration amongst Muslims.
- The project aims to examine the influence of Islamic authority online through the examination of the influence of pro-isolation or pro-integration Islamic scholars/readings amongst networks of Muslims on Twitter. Social network analysis and geospatial trend analysis will be used to examine the geographical relationship between proximity, distribution, sentiment and Islamic authority amongst scholars and followers.

University College London • Research Engineer • September 2012 to present
- Postgraduate research engineer working on a four-year project aimed at developing a geo-spatial agent-based model and geographical information system (GIS) tool to support the British Red Cross' (BRC) strategic and operational understanding of relief distribution during flood emergencies in the UK.
- Received a full EngD studentship from the Urban Sustainability & Resilience Centre (USAR) and the Engineering and Physical Sciences Research Council (EPSRC) totalling £80,860.
- Lead researcher on a supplementary project with the BRC to create an open source GIS index to examine UK flood vulnerability and support the BRCs emergency response and preparation work through the identification of vulnerable communities throughout the UK who may be at increased risk of flooding based upon open source demographic and socio-economic data.
- Lectured on GIS and ABM as part of the UCL Transport Studies MSc, 2016
- Supervised 3 MSc students working on HXL, INSPIRE, and geo-analysis of Thames flooding.

British Red Cross • Digital Support Officer • September 2012 to present
- Provided assistance to the BRC Maps Team during emergency appeals, including Typhoon Haiyan, the Nepal Earthquake and Ebola and Zika outbreaks.
- Helped produce static and web-based maps to assist responders and raise awareness.
- Sourced, analysed, organised and standardised constantly updating field data to disseminate across multiple organizations and countries.

Oxford University Press • Production Controller • April 2012 to September 2012
- Responsibilities included managing Music stock in the UK, New York and China OUP warehouses, the demand printing of music, the management of reprinting and managing the costs and schedules on a busy print list.

British Red Cross • Researcher • October 2010 to January 2012
- Lead researcher on a national floods study aimed at enhancing the voluntary sector's collective understanding of the needs of flood-affected individuals and communities.
- Responsibilities included liaising, and forming partnerships, with internal and external parties; engagement with communities and local authorities; coordination of community meetings, focus groups and interviews; quantitative and qualitative community-based participatory research; survey and interview design and data analysis; external policy review, project evaluation and meta-evaluations; production of comprehensive literature reviews, summary documents and annotated bibliographies; production of internal and external reports, articles and press releases; online and offline research techniques; contact administration and database production and management; the provision of recommendations for future British Red Cross research; and administrative work and general office duties.
- Also produced a UK-wide risk database as part of a project examining UK emergency planning capacity, a detailed literature review on UK extreme weather to guide future British Red Cross work, and a report examining methods of Third Sector project evaluation and outcomes measurement.

International Volcanic Health Hazards Network • Administrator • January to September 2009
- Liaising with experts and members on a global scale to keep details and records up-to-date, production and translation of volcanic hazard pamphlets and guidelines for public and emergency managers around the world, overhaul and design of IVHHN website.

PUBLICATIONS, PRESENTATIONS, POSTERS & AWARDS

- Garbutt, K., Ellul, C. & Fujiyama, T. (2017) *Agentising Vulnerability: Modelling the impact of NGO Response on Vulnerability during Flood events.* Abstract and presentation at American Association of Geographers 2017, Boston, MA. April 5, 2017. Available online.
- Received a UCL Enterprise Secondment Award to cover a six month Knowledge Exchange secondment at the British Red Cross totalling £9,608.
- Garbutt, K., Ellul, C. & Fujiyama, T. (2016) *Developing a geo-spatial agent-based model to support the strategic and operational understanding of relief distribution during flood emergencies in the UK*. Abstract and presentation at American Association of Geographers 2016, San Francisco, CA. March 31, 2016. Available online.
- Garbutt, K. (2015) *Developing a geo-spatial agent-based model to understand relief distribution during flood emergencies in the UK*. Winner best abstract at Urban Sustainability & Resilience Showcase 2015, University College London, London. November 10, 2015. Available online.
- Garbutt, K., Ellul, C. & Fujiyama, T. (2015) *Assessment of social vulnerability under three flood scenarios using an open source vulnerability index*. Abstract and presentation at GISRUK 2015, University of Leeds, Leeds. April 15, 2015. Available online.
- Garbutt, K., Ellul, C. & Fujiyama, T. (2015) *Mapping social vulnerability to flood hazard in Norfolk, England*, Environmental Hazards, 14:2, pp. 156-186. Available online.
- Garbutt, K. (2013) *Using GIS and an Indicator-based Approach to Identify and Map Social Vulnerability: A Case Study of Norfolk, England*. Poster and MRes thesis presented at Urban Sustainability and Resilience Showcase 2013. University College London, London. November 19, 2013. Available online.

- Garbutt, K. (2013) *Media, Representation, Persistence, and Relief: The Role of the Internet in Understanding the Physical and Social Dynamics of Catastrophic Natural Hazards*. Abstract and poster presented at Institute of Risk and Disaster Reduction (IRDR) 3rd Annual Conference 2013, University College London, London. June 14, 2013. Available online.
- Received a full Engineering and Physical Sciences Research Council (EPSRC) studentship from the Urban Sustainability & Resilience Centre (USAR) at UCL totalling £80,860.
- Garbutt, K. (2010) *Media, Representation, Persistence and Relief: the Role of the Internet in Understanding the Physical and Social Dynamics of Catastrophic Natural Hazards*. Masters thesis, Durham University. Available online.

TEACHING & VOLUNTARY WORK

University College London
- Lecturer – Transport Studies MSc, 2016
- Supervisor – 3 GIS MSc students (HXL, INSPIRE, geo-analysis of Thames flooding)

Médecins Sans Frontières (MSF)
- GIS Volunteer/Emergency Appeal Mapper – 2014 to present
- Helped develop an Ebola propagation model to project disease-spread trajectories within Ebola-affected urban areas in marginal or conflict zones – October 2014

MissingMaps/Humanitarian OpenStreetMap Team (HOT)
- GIS Volunteer/Emergency Appeal Mapper – 2014 to present

British Red Cross
- Digital Support Officer & Fundraiser – 2010 to present

29th Urban Data Management Symposium, University College London, May 2013
- Assistant: Symposium preparation, logistics, organisation, photography, reception.

TECHNICAL SKILLS

Programming – Experience using Java, Python, PHP, HTML. Interest in JavaScript, Android.

GIS – Experience using QGIS and ArcGIS for spatial data modeling, spatial data transformation and network analysis. Knowledge ArcPy for automation of geoprocessing, and PostGIS and PostgreSQL for GIS database design, storage, and systems analysis.

ABM – Experience using MASON. Knowledge of NetLogo and AnyLogic.

Computing – Experience using Microsoft Windows, MacOS and UNIX, as well as various database, statistics and design programs, including Excel and Access, STATA and SPSS and Photoshop and Illustrator.

INTERESTS & ADDITIONAL SKILLS

Photography – I am an avid photographer and have had photographs published by the Guardian, Financial Times, Lonely Planet, WIRED, The Verge, Oxfam, Fast Company, VICE, Foreign Affairs, BuzzFeed, Epoch Times, National Geographic, The Conversation, Popular Mechanics and several published books as well as incorporated into corporate work for national and international companies through GettyImages. I also have a working knowledge of photo editing, graphic design and the Adobe Photoshop and Illustrator suites.

Languages – English (fluent); German (beginner); Spanish (beginner).

MRES/ENGD RESULTS & AWARDS SUMMARY

- Advanced Research Practice – 88% • Distinction • Highest mark in the year
- Representation, Structures and Algorithms – 85% • Distinction • Highest mark in the year
- GIS Principles and Technology – 76% • Distinction
- Interdisciplinary Thinking in Urban Sustainability and Resilience – 75% • Distinction
- Disaster Risk Reduction in Cities – 70% • Distinction
- The Management of Large Projects & Programmes – 77% • Distinction
- Geodemographics & Population Geography – 68%