

Huanfa Chen

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EDUCATION

2014 - present	Ph.D. Geographical Information Science – University College London Advisor: Prof. Tao Cheng, Prof. John Shawe-Taylor Research Topic: Designing Effective Police Patrolling Strategy on Street Network	London, UK
2011 - 2014	Master of Science – Peking University Thesis: Spatio-temporal Modelling of Urban Air Quality in Beijing	Beijing, China
2007 - 2011	Bachelor of Science in Chemistry - Peking University	Beijing, China

RESEARCH EXPERIENCE

2014 - present	Designing Effective Police Patrolling Strategy on Street Network Work with Prof. Tao Cheng Part of EPSRC-funded CPC project (http://www.ucl.ac.uk/cpc/) Design effective routing strategy for police patrolling in order to monitor the crime hotspots and respond to calls for service. Used methods include linear optimisation, heuristics, agent-based simulation.	London, UK
01 - 09 /2014	Spatio-temporal Modelling of Urban Air Quality in Beijing Work with: Prof. Qi Li Statistical analysis of the PM2.5 concentration time series data in Beijing. Building a spatio-temporal ARIMR model to predict the future air pollution level. The model has high predicting accuracy.	Beijing, China
09/2011 - 06/2012	Testing of an online Remote Sensing Product Distributing System Work with: Prof. Qi Li Use software testing techniques to test the functions of the remote sensing product distributing system. Produce a report on the system functionality.	Beijing, China
01/2012 – 09/2014	A 3D Simulation System for Hazardous Chemical Leakage Accidents Work with: Prof. Qi Li Design and implement a 3D GIS system for simulating chemical leakage accident based on atmospheric dispersion models, to support emergency response.	Beijing, China

WORK EXPERIENCE

2014 – present	University College London – Postgraduate Teaching Assistant Teaching skills: Lecture in “Agent Based Simulation” as part of the Msc Course <i>Spatio-Temporal Data Mining</i> in 2016 and 2017. Communication skills: guide the tutorial session of Spatio-Temporal Data Mining (CEGE076, 2015/2017) and GIS Principles and Technology (CEGE082, 2017). Tutorials involve programming in R/Python/Netlogo.	London, UK
06 – 08 / 2011	China Branch of Micro-Vu Inc. – Software Testing Engineer Internship Team working skills: work with 3 software developers to ensure the functionality of the software.	Beijing, China
06 – 08 / 2008	Chunmiao Education Group – Volunteering Tutor Teaching skills: teach geography, chemistry and English to a class of 20 primary school students.	Jieyang, China

PUBLICATIONS

Peer-Reviewed Journal Articles

- **Huanfa Chen**, Tao Cheng, John Shawe-Taylor. Balanced Route Design for Min-Max Multiple-Depot Rural Postman Problem (MMMDRPP): a police patrolling case. Accepted by International Journal of Geographical Information Science. International Journal of Geographical Information Science, pp.1–22.
- **Huanfa Chen**, Tao Cheng, Sarah Wise. Developing an online cooperative police patrol routing strategy. Computers, Environments and Urban Systems. 62, 19–29 (2017). (Indexed by SSCI, impact factor 2.092)
- Hamed Karimian, Qi Li, **Huanfa Chen**. Accessing Urban Sustainable Development in Isfahan, Applied Mechanics and Materials. 2013, 253-255, 244-248
- Yan Qiao, **Huanfa Chen**, Yiyang Lin, Zhiyi Yang, Xinhao Cheng, Jianbin Huang. Photoluminescent Lanthanide-Doped Silica Nanotubes: Sol-Gel Transcription from Functional Template, *Journal of Physical Chemistry C*, 2011, 115, 7323–7330
- Yan Qiao, **Huanfa Chen**, Yiyang Lin, Jianbin Huang. Controllable Synthesis of Water-Soluble Gold Nanoparticles and Their Applications in Electrocatalysis and Surface-Enhanced Raman Scattering, *Langmuir* 2011, 27, 11090-11097

Peer-reviewed Conference/Workshop Proceedings

- **Huanfa Chen**, Tao Cheng. Designing police patrol districts on street network. in *Proceedings of the 14th International Conference of GeoComputation, 2017, Leeds, UK*.
- **Huanfa Chen**, Tao Cheng. Modelling Police Patrol Routing as Min-Max Postmen Problems. in *Proceedings of Geographical Information Science Research - UK 2017 (GISRUK 2017)*, 2017.
- **Huanfa Chen**, Tao Cheng*, Sarah Wise, 2015. Designing Daily Patrol Routes for Policing Based on Ant Colony Algorithm. ISPRS Annals of Photogrammetry, Remote Sensing and Spatial Information Sciences, II-4/W2, pp.103–109.
- **Huanfa Chen**, Qi Li, Yajie Zhu, Hamed Karimian. Research of 3D simulation system for chemical accidents based on atmospheric dispersion model, in *Proceedings of International Conference on Earth Science and Environmental Protection 2013 (ICESEP 2013)*, 2013.
- Hamed Karimian, Qi Li, **Huanfa Chen**. Correlation between AOD and Pm2.5 over Tehran Iran, in *Proceedings of International Conference on Earth Science and Environmental Protection 2013 (ICESEP 2013)*, 2013, Kunming, China.
- Yajie Zhu, Qi Li, **Huanfa Chen**. System Design of a Simulation System for Hazardous Chemicals Leakage, in *Proceedings of the 12th International Conference of GeoComputation*, 2013, Wuhan, China

Presentations

- Oral presentation, Spatio-temporal Optimisation of Cooperative Police Patrol Routes. In *Association of American Geographers (AAG) Annual Meeting*, March 29-Apr. 2, 2016, San Francisco, CA, USA.
- Oral presentation, Designing Daily Patrol Routes for Policing Based on Ant Colony Algorithm. In *the 1st International Symposium on Spatiotemporal Computing (ISSC 2015)*, Fairfax, VA, US.

RESEARCH INTERESTS

My primary area of research concerns route design, district design and spatial optimisation for distributed service and police patrol. My current work involves designing routes for a group of police patrollers to effectively cover the area and respond to calls for service. I am also very interested in spatio-temporal data mining, including clustering approaches, text mining and knowledge discovery of social media data.

LEADERSHIP EXPERIENCE

2016 - present	Peking University Alumni Association in the UK. General Secretary • Coordinate a 20-person committee to guarantee the development of the association. Oversaw a 10% membership boost compared to the previous year. • Organise monthly seminars and 150-person annual meeting.	UK
2011 - 2012	Coordinator of Badminton Club of Peking University • Organise weekly training of the 20-person club and games against other teams.	Beijing, China

AWARDS

2017	Distinction Award , in the 2017 Shanghai Open Data Apps Competition. Responsible for design and implementation of the project entitled <i>Planning Docking Stations and Optimising Operations in Sharing Bicycle Management</i>
2017	Travel Fund for Early-Career Researchers . Lorentz Centre, Leiden University, Netherland. To attend the Workshop <i>Movement: New Sensors, New Data, New Challenges</i> . (€300)
2014-2018	UCL-CSC Joint Research Scholarship . From University College London & China Scholarship Council. (Full Ph.D. scholarship. Covering tuition fees and expenses.)
2015	Excellent Prize , in the 2015 ISPRS-Scientific Initiative Open Data Challenge. By Shenzhen Key Laboratory of Spatial Smart Sensing and Services, Shenzhen University.
2015	Honorable Mention for Best Young Researcher Paper . In the 1st International Symposium on Spatiotemporal Computing (ISSC 2015), Fairfax, VA, US. (\$500)
2010	China National Petroleum Corporation Scholarship . Peking University. For undergraduate students with excellent academic performance.
2008	Merit Student Awards . Peking University.

ADDITIONAL INFORMATION

Languages	English (fluent), Madarin (native), Cantonese (fluent) and Teochew (native)
Programming language	R, Java, Python, C++.
Applications	Esri ArcGIS, MS Office Suite, WordPress
Interests	Travel, sports (practicing badminton in competition), history and science
Academic membership	Member of ICA Commission on Location Based Services; member of The International Association of Chinese Professionals in Geographical Information Sciences