Hao Wu | Senior Data Scientist

Ricardo Energy & Environment

✉ hao.wu@ricardo.com • 🌐 moho.netlify.com • 🐙 mohowu

Education

University of Edinburgh, UK

Ph.D.   *2017*
- Understanding the spatial-temporal variability of urban air pollution
- Dispersion and statistical modelling of urban air pollution
- Conducting air quality measurements using stationary and portable air quality monitors.

University of Edinburgh, UK

BSc (1st Class)   *2013*
- Environmental and Sustainable Chemistry

South China University of Technology, China

BSc   *2013*
- Applied Chemistry

Employment

Ricardo Energy & Environment

Senior Data Science Specialist   *Jan 2020 - Present*
- Dynamic reporting, data visualisation and building tools for analysing air quality data
- Building R Shiny applications integrated with SQL database for data checking and ratification
- Building bespoke R packages to simplify the process of data analysis
- Using regression and tree based statistical models to predict air quality trends
- Building Python CLI tool to scrape and compare data from XML files
- Mentoring staff on doing data analysis in R

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Data Science Specialist   *Apr 2017 - Jan 2020*

Teaching Experience

2019: Teaching assistant at Ricardo openair and R data analysis training course. London, UK

2019: Teaching assistant at Ricardo openair and R data analysis training course. Huelva, Spain

2013 - 2016: Second Year Physical Chemistry Lab Demonstrator. University of Edinburgh, UK

2013 - 2016: Second Year Environmental Chemistry Lab Demonstrator. University of Edinburgh, UK

Techinal Skills

Programming Languages
Proficient: R.
Intermediate: MySQL.
Basic: CSS, HTML, Bash, Python.

Software
Advanced: RStudio, ADMS-Urban, MS Word.
Intermediate: PyCharm, ArcGIS, FME, MS Excel, Sketchup, Fusion 360.

Honours and Awards

2016: Reviewer of Environmental Pollution Journal.

2013 - 2016: Edinburgh Global Research Scholarship.

2013: Undergraduate Research Project Prize.

Conferences and Training Courses

2016: Oral presentation at International Society of Exposure Science. Utrecht, Netherlands

2016: Oral presentation at Annual UK Review Meeting on Outdoor and Indoor Air Pollution Research. Solihull, UK

2014, 2015: Poster presentation at Annual UK Review Meeting on Outdoor and Indoor Air Pollution Research. Solihull, UK

2015: FME Desktop Introductory and Advanced Training. Edinburgh, UK

2014: ACCENT Plus Summer School on Drivers, Feedbacks and Impacts in Air Quality and Climate Change. Urbino, Italy

2014: ADMS-Urban and EMIT Trainings. Cambridge, UK

Publications

1. Lin, C., Masey, N., Wu, H., Jackson, M., Carruthers, D. J., Reis, S., Doherty, R. M., Beverland, I., & Heal, M. R. (2017). Practical field calibration of portable monitors for mobile measurements of multiple air pollutants. *Atmosphere*, *8*(12). https://doi.org/10.3390/atmos8120231

2. Kenagy, H. S., Lin, C., Wu, H., & Heal, M. R. (2016). Greater nitrogen dioxide concentrations at child versus adult breathing heights close to urban main road kerbside. *Air Quality, Atmosphere & Health*, *9*(6), 589–595. https://doi.org/10.1007/s11869-015-0370-3

3. Wu, H., Reis, S., Lin, C., & Heal, M. R. (2017). Effect of monitoring network design on land use regression models for estimating residential NO2 concentration. *Atmospheric Environment*, *149*, 24–33. https://doi.org/10.1016/j.atmosenv.2016.11.014

4. Wu, H., Reis, S., Lin, C., Beverland, I. J., & Heal, M. R. (2015). Identifying drivers for the intra-urban spatial variability of airborne particulate matter components and their interrelationships. *Atmospheric Environment*, *112*, 306–316. https://doi.org/10.1016/j.atmosenv.2015.04.059

5. Steinle, S., Reis, S., Sabel, C. E., Semple, S., Twigg, M. M., Braban, C. F., Leeson, S. R., Heal, M. R., Harrison, D., Lin, C., & Wu, H. (2015). Personal exposure monitoring of PM2.5 in indoor and outdoor microenvironments. *Science of the Total Environment*, *508*, 383–394.