

RUTH NEVILLE, PhD

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Research Fellow

Bartlett Centre for Advanced Spatial Analysis
Bartlett Faculty of the Built Environment
University College London

Research Interests

I am a spatial data scientist specialising in population geography and demography, with a focus on migration and mobility. My research investigates international student mobility and the socio-economic, cultural, economic, and institutional factors shaping migration flows, with an emphasis on the impact of external shocks such as Brexit and the COVID-19 pandemic. In my PhD, I employ advanced methodologies, including machine learning forecasting models and spatial interaction models, to predict and measure trends in international student applications to the UK. I have also contributed to projects that leverage innovative spatial data sources, such as digital trace data, to analyse population movements during crises. Building on this work, my future research seeks to apply statistical modelling and spatial data science techniques to refine migration forecasting methods and understand the dynamics and resilience of migration systems.

Research Methods:

Spatial Analysis | Spatial Modelling | Supervised & Unsupervised Machine Learning | Difference-in-Differences | Network Analysis | Data Visualisation | Sentiment and Text Analysis | Cartography

EDUCATION

PhD | Geographic Data Science | University of Liverpool
2020–2025

MSc | Geographic Data Science (Distinction) | University of Liverpool
2020–2022

MA | Political Science – Democracy and Elections (Research Route) (Merit) |
University of Manchester
2017–2018

BA | Philosophy, Politics, and Economics (1st Class Hons.) | University of Lancaster
2013–2016

EMPLOYMENT

Research Fellow/Postdoc

University College London

May 2025 – present

Teaching Assistant

University of Liverpool

2022–2025

Assisting in the delivery of undergraduate and master's level modules, including:

- Geographic Information Systems
- Geographic Data Science
- Study Skills and GIS
- Social and Spatial Inequalities
- Essay writing in Political Geography

Research Assistant | A Big Data Digital Twin of Mass Transit in Liverpool City Region for Smart, Equitable Mobility

Nov. 2024 – present

Organising a workshop entitled “UK-South Korea Bilateral R&D Workshop II: Digital Twins and Data-Driven Transport Planning”, event coordination, assemble workshop programme, support event delivery, assemble post-workshop project

Research Assistant | RECAST – Strengthening Policy Collaboration with the UN

University of Liverpool

Jan. 2023 – Jul. 2023

Contributed to project design, data preparation, cleaning, visualisation, and statistical analysis.

Research Assistant | Understanding the Mobility Patterns of Ukrainians Using Meta Data

University of Liverpool

Apr. 2022 – Sept. 2022

Led data preparation, visualisation, statistical analysis, and assisted in research design.

Data Analyst

Central Planning, University of Manchester

Oct. 2018 – Sept. 2020

Academic Writing Mentor

Management School, Lancaster University

Oct. 2015 – June.2016

VISITING RESEARCHER

Max Planck Institute for Demographic Research, Rostock, Germany

Sept-November 2024, Apr–May 2024

United Nations Economic Commission for Latin America and the Caribbean,

Santiago, Chile, July 2023

PEER-REVIEWED JOURNAL ARTICLES

- **Neville, R., Rowe, F., Singleton, A.** (2024). Unravelling the Brexit-COVID-19 Nexus: Assessing the Decline in EU Student Applications. *Data & Policy*. [DOI](#).
 - **Neville, R., Rowe, F., Singleton, A.** (2024). Nonlinear Relationships Between Human Development and International Student Mobility: The Prominent Role of Employment Prospects and Cultural Ties. *Population, Space and Place*. [DOI](#)
 - **González-Leonardo, M., Neville, R., Gil-Clavel, S., Rowe, F.** (2024). Where Have the Ukrainian Refugees Gone? Integrating Digital and Traditional Geographic Data. *Population, Space and Place*. [DOI](#).
 - **González-Leonardo, M., Cabrera-Arnau, C., Neville, R., Nasuto, A., Rowe, F.** (2024). COVID-19 and Population Movements in Mexico: A Digital Data Analysis. *Estudios Demográficos y Urbanos*. [DOI](#).
 - **González-Leonardo, M., Cabrera-Arnau, C., Neville, R., et al.** (2025). "Urban Exodus" During COVID-19 in Mexico? Medium-Term Pandemic Impacts. *Demography*.
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WORKING PAPERS

- **Neville, R., Anastasiadou, A.** Gender differences in international student applications to the UK. (Forthcoming)
- **Cabrera-Arnau, C., Neville, R.** Understanding student perceptions on the use of generative AI tools in UK Higher Education. (In Review)
- **Cabrera-Arnau, C., González-Leonardo, M., Rowe, F., Neville, R., Nasuto, A.** Evaluating the long-term impact of COVID-19 on human mobility across population groups in Latin American countries. (In Review)

- **Neville, R., Rowe, F., Zagheni, E.** Advancing Forecasting Methods for International Student Applications Using Machine Learning: A Comparative Analysis and Scenario Exploration. (In preparation)
- **Neville, R., Mason, M.** Impact of anti-migrant policy on international student applications to the UK. (In preparation)

REPORTS

- **Rowe, F., Cabrera-Arnau, C., González-Leonardo, M., Nasuto, A., Neville, R.** (2024). Medium-term changes in the patterns of international population movements in Latin American countries: Effects of COVID-19 pandemic. *Population and Development: Series 139*. [DOI](#).
- **International Organisation of Migration (IOM).** (2024). Bridging Climate Change and Human Mobility—Collective analysis for a deeper understanding of climate mobility in the East and Horn of Africa. (Contributor). [DOI](#).

CONFERENCE PROCEEDINGS

Neville, R., Rowe, F., Singleton, A. (2022) *Exploring flows of international students into the UK over the period of 2009-2019 using UCAS Application Data*. 30th GISRUK Conference 2022. Liverpool, U.K. [DOI](#)

INVITED TALKS

17th September 2024

"Unravelling the Brexit-COVID-19 Nexus: Assessing the Decline in EU Student Applications into UK Universities",

International migration in Central and Eastern Europe: changing patterns, determinants, and measurement challenge, Max Planck Institute for Demographic Research.

17th May 2024

"From Past Patterns to Future Prospects: Understanding international student applications into UK Higher Education",

RAM Colloquium, TU Dortmund.

17th May 2024

"Advancing Forecasting Methods for International Student Applications: A Comparative Analysis and Scenario Exploration",

Talk-toranden Series, TU Dortmund.

CONFERENCE SESSIONS AND WORKSHOPS ORGANISED

Upcoming

2025 "Spatial Methods for Spatial Populations", Conference Session, Royal Geographical Society (RGS) Annual Conference, August 2025

Past

2025 Computational Demography and Data Science, Strand Organiser, Popfest, July 2025

2025 "UK-South Korea Bilateral R&D Workshop II: Digital Twins and Data-Driven Transport Planning", Organiser, January 2025

2024 "PGR-led session for Early-Career Quantitative Geographers", Conference Session, Royal Geographical Society (RGS) Annual Conference, August 2024

2023 "PGR-led session for Early- Career Quantitative Geographers", Conference Session, Royal Geographical Society (RGS) Annual Conference, August 2023

2023 "Training Workshop." (Policy Workshop: RECAST project - Using Digital Footprint Data to Measure and Monitor Human Mobility) – Project Findings. United Nations. Santiago, Chile, July 2023

2023 "Policy Engagement Workshop" Policy Workshops: RECAST project – Using Digital Footprint Data to Measure and Monitor Human Mobility, Chile, July 2023

Conference Presentations

2024

"Advancing Forecasting Methods for International Student Applications: A Comparative Analysis and Scenario Exploration"

- Scholarly Migration and Mobility Symposium, Max Planck Institute for Demographic Research (MPIDR), Rostock, Germany (Oral Presentation)
- British Society of Population Studies (BSPS) Conference, Bath, U.K. (Oral Presentation)
- Conference on Complex Systems, Exeter, U.K. (Oral Presentation)

"Unravelling the Brexit-COVID-19 Nexus: Assessing the Decline in EU Student Applications into UK Universities"

- 12th Annual Conference on Population Geographies, Belfast, U.K. (Oral Presentation)

- Population Association of America Annual Meeting, Columbus, OH, USA (Poster Presentation)

"Uncovering Heterogeneity by Development Level: Delving Deeper into International Student Mobility Into the United Kingdom Using Admissions Data From UCAS"

- Population Association of America Annual Meeting, Columbus, OH, USA (Oral Presentation)

2023

"Evaluating the Impact of the End of Free Movement (Brexit) and COVID-19 on Inflows of International Students into Universities in the United Kingdom"

- Symposium on the Relevance of Applied Population Geography, Lesbos, Greece (Oral Presentation)
- British Society of Population Studies (BSPS) Conference, Bath, U.K. (Oral Presentation)
- RGS-IBG Annual Conference, London, U.K. (Oral Presentation)

"Understanding Flows of Internationally Mobile Students into the UK Between 2009-2019 Using UCAS Data"

- RSAI-BIS Annual Meeting, Newcastle, U.K. (Oral Presentation)
- Population Association of America Annual Conference, New Orleans, OH, USA (Poster Presentation)

2022

"Understanding Flows of Internationally Mobile Students into the UK Between 2009-2019 Using UCAS Data"

- Annual Early Career Colloquium of the Regional Science Association International – British and Irish Section, U.K. (Oral Presentation)
- COST Action European Network on International Student Mobility: Connecting Research and Practice, Tartu, Estonia (Oral Presentation)
- Geographical Information Science Research UK (GISRUK), Liverpool, U.K. (Oral Presentation)

SESSION CHAIRS

- BSPS 2024 | RGS 2024 | Symposium on the Relevance of Applied Population Geography 2023 | RGS 2023 | GISRUK 2022 |

REVIEWS

- Population, Space and Place | Transactions of the Institute of British Geographers | REGION | Eastern Economic Journal
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AWARDS AND PRIZES

- **Finalist** | Liverpool 3 Minute Thesis (3MT) Competition (2024)
 - **Best Presentation** | Early Career Colloquium of the Regional Science Association International – British and Irish Section (2022)
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COMMITTEE MEMBERSHIPS

Web and Social Media Officer

Quantitative Methods Research Group (QMRG), Royal Geographical Society (RGS)
2024 – Present

- Manage the design of a new logo for the research group.
- Oversee social media channels to promote QMRG activities and initiatives.
- Maintain and update the QMRG website.
- Lead the dissemination of information about the research group to the wider academic community.

Postgraduate Research (PGR) Representative

Quantitative Methods Research Group (QMRG), Royal Geographical Society (RGS)
2022 – 2024

- Organised and led the annual Early Career Researcher (ECR) session at the RGS Annual Conference.
 - Developed a network for ECRs in quantitative geography to foster collaboration and support.
 - Created and managed newsletters showcasing the work of ECRs in quantitative geography.
 - Represented the views and interests of postgraduate researchers within the research group.
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TECHNICAL SKILLS

R – Advanced: Data Cleaning and Manipulation, Spatial Modelling, Cartography, Data Visualisation, Supervised and Unsupervised Machine Learning

Python – Intermediate: Data Cleaning and Manipulation, Supervised and Unsupervised Machine Learning, Cartography, Data Visualisation

LaTeX – Intermediate: Document creation

QGIS – Intermediate: GIS, Spatial Analysis, Cartography

Power BI – Intermediate: Dashboard Creation

PROFESSIONAL MEMBERSHIPS

- **Associate Fellow** | UK Higher Education Academy (2024–present)
 - **Fellow** | Royal Geographical Society (2022–present)
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PERSONAL

High School: The Belvedere Academy, Liverpool

A-Levels: AAA (Economics, Political Science, English Literature)

GCSEs: 10 A*-B including Maths and English

Citizenship: British

Location: Liverpool, U.K.

Driving Licence: Full U.K.

REFERENCES AVAILABLE UPON REQUEST

Updated: August 2025