

JUSTIN T. VAN DIJK

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Human geographer. Spatial data scientist. Lecturer. Interested in spatial inequalities and spatial justice, urban transport, and big data applications in scarce data environments. Extensive experience in the domain of Geographic Information Systems, urban studies, and transport research. Possesses a wide skill set in the field of advanced spatial analysis, experienced with Python programming, R scripting, and PostgreSQL/PostGIS.

Present Appointment

2021 – Present **Lecturer**, University College London

Department of Geography. Lecturer in Social and Geographic Data Science. Contributing to the M.Sc. modules *Principles of Spatial Analysis* and *Data, Politics and Society* as well as the undergraduate modules *Geocomputation* and *Geography in the Field II*.

Visiting Appointments

2022 – Present **Research Fellow**, Stellenbosch University

School for Data Science and Computational Thinking.

Previous Appointments

2020 – 2021 **Associate Lecturer**, University College London

Department of Geography. Associate Lecturer in Quantitative Social Science.

2018 – 2021 **Postdoctoral Research Associate**, University College London

Department of Geography. Research Associate in the Geospatial Analytics and Computing Research Group.

2014 – 2017 **Junior Lecturer**, Stellenbosch University

Department of Logistics. Part-time appointment.

2013 **Junior Lecturer**, Utrecht University

Department of Human Geography and Planning.

2012 **Teaching Assistant**, Stellenbosch University

Department of Logistics.

2009 – 2012 **Teaching Assistant**, Utrecht University

Department of Human Geography and Planning.

Education

- 2014 – 2017 **Doctor of Philosophy**, Stellenbosch University
Transport Economics. Dissertation title: “Designing Travel Behaviour Change interventions: A spatiotemporal perspective”.
- 2011 – 2013 **Master of Science**, Utrecht University. GPA 4.0. **Cum Laude**.
Human Geography and Planning. Dissertation title: “Towards spatial justice: The spatial equity effects of a toll road in Cape Town, South Africa”.
- 2007 – 2011 **Bachelor of Science**, Utrecht University. GPA 4.0.
Human Geography and Planning. Dissertation title: “Contemporary Orientalism? Representations of Islam and Muslims in the Dutch Press: a content analysis of ‘De Volkskrant’ and ‘De Telegraaf’, 2001-2010”.

Journal Articles

- 2021 Longley, P. A., **Van Dijk, J. T.**, and Lan, T. The geography of inter-generational social mobility in Britain. *Nature Communications* 12: 6050.
doi: [10.1038/s41467-021-26185-z](https://doi.org/10.1038/s41467-021-26185-z)
- Van Dijk, J. T.**, Lansley, G., and Longley, P. A., Using linked consumer registers to estimate internal migration in the United Kingdom. *Journal of the Royal Statistical Society: Series A (Statistics in Society)* 184(4): 1452-1474.
doi: [10.1111/rssa.12713](https://doi.org/10.1111/rssa.12713)
- Lan, T., **Van Dijk, J. T.**, and Longley, P. A., Family names, city size distributions and residential differentiation in Great Britain, 1881-1901. *Urban Studies*. Advance online publication. doi: [10.1177/00420980211025721](https://doi.org/10.1177/00420980211025721)
- 2020 **Van Dijk, J. T.** and Longley, P. A. Interactive display of surname distributions in historic and contemporary Great Britain. *Journal of Maps* 16(1): 68-76.
doi: [10.1080/17445647.2020.1746418](https://doi.org/10.1080/17445647.2020.1746418)
- Kandt, J., **Van Dijk, J. T.**, and Longley, P. A. Family name origins and inter-generational demographic change in Great Britain. *Annals of the American Association of Geographers*. 110(6): 1726-1742.
doi: [10.1080/24694452.2020.1717328](https://doi.org/10.1080/24694452.2020.1717328)
- Engin, Z., **Van Dijk, J. T.**, Lan, T., Longley, P. A., Treleaven, P., Batty, M., and Penn, A. Data-driven urban management: Mapping the landscape. *Journal of Urban Management* 9(2): 140-150. doi: [10.1016/j.jum.2019.12.001](https://doi.org/10.1016/j.jum.2019.12.001)
- 2018 **Van Dijk, J. T.** Identifying activity-travel points from GPS-data with multiple moving windows. *Computers, Environment and Urban Systems* 70: 84-101.
doi: [10.1016/j.compenv.urbsys.2018.02.004](https://doi.org/10.1016/j.compenv.urbsys.2018.02.004)

2017 **Van Dijk, J. T.** and Krygsman, S. C. Using GPS-based activity spaces and opportunity indicators for travel behaviour analysis. *Journal of Urban Technology* 25(2): 105-124. doi: [10.1080/10630732.2017.1400814](https://doi.org/10.1080/10630732.2017.1400814)

Van Dijk, J. T. and De Jong, T. Post-processing GPS tracks in reconstructing travelled routes in a GIS-environment: Network subset selection and attribute adjustment. *Annals of GIS* 23(3): 203-217.
doi: [10.1080/19475683.2017.1340340](https://doi.org/10.1080/19475683.2017.1340340)

2015 Idahosa, L. O. and **Van Dijk, J. T.** Freedom for whom in South Africa? Inequality, unemployment and the elderly. *Development* 58(1): 96-102.
doi: [10.1057/dev.2015.18](https://doi.org/10.1057/dev.2015.18)

Van Dijk, J. T., Krygsman, S. C., and De Jong, T. Towards spatial justice: The spatial equity effects of a toll road in Cape Town, South Africa. *Journal of Transport and Land use* 8(3): 95-114. doi: [10.5198/jtlu.2015.555](https://doi.org/10.5198/jtlu.2015.555)

Book Chapters

2021 **Van Dijk, J. T.**, Lansley, G., and Longley, P. A., Using linked consumer and administrative data to model demographic changes in London's city fringe. In: Clarke, G., Birkin, M., and Stimson, B. (Eds.), *Applications of Big Data in Geography and Planning. An Essential Companion*, pp. 43-51. Cheltenham: Edward Elgar Publishing.

2013 Wolfensberger M., Dekker, M., **Van Dijk, J. T.**, Zubizarreta, J., Hait, C., Mann, C., and Lucas, C. Learning as salon: Honors International Collaboration. In: Mulvaney, M. K. and Klein, K. (Eds.), *Preparing Tomorrow's Global Leaders: Honors International Education*, pp. 75-84. Lincoln: National Collegiate Honors Council. NCHC Monograph Series.

Conference Proceedings

2022 Kimura, S., Longley, P. A., and **Van Dijk, J. T.** Exploring the spatial disparities in gambling risk and vulnerability. *Proceedings of the 30th Conference of GIS Research UK (GISRUK)*. Liverpool: University of Liverpool.
doi: [10.5281/zenodo.6407146](https://doi.org/10.5281/zenodo.6407146)

Winner of the CASA Prize for Best Paper in Spatial Analysis

2021 **Van Dijk, J. T.** and Longley, P. A. Developing a data infrastructure for bespoke demographic analysis. *Proceedings of the 29th Conference of GIS Research UK (GISRUK)*. Cardiff: Cardiff University.
doi: [10.5281/zenodo.4664749](https://doi.org/10.5281/zenodo.4664749)

Chen, M., Chi, B., **Van Dijk, J. T.**, and Longley, P. A. The use of Linked Consumer Registers to understand social mobility and residential mobility.

Proceedings of the 29th Conference of GIS Research UK (GISRUK). Cardiff: Cardiff University. doi: [10.5281/zenodo.4665856](https://doi.org/10.5281/zenodo.4665856)

Kuleszo, J., Coulter, R., **Van Dijk, J. T.**, and Longley, P. A. Linking consumer datasets to chart residential moves in private rental housing in England and Wales. *Proceedings of the 29th Conference of GIS Research UK (GISRUK)*. Cardiff: Cardiff University. doi: [10.5281/zenodo.4665818](https://doi.org/10.5281/zenodo.4665818)

2020 **Van Dijk, J. T.** and Longley, P. A. Platial geo-temporal demographics using family names. In: Westerholt, R. and Mocnick, F.-B. (Eds.), *Proceedings of the 2nd International Symposium on Platial Information science (PLATIAL'19)*. Warwick: Warwick University. 23-31. doi: [10.5281/zenodo.3628863](https://doi.org/10.5281/zenodo.3628863)

2019 **Van Dijk, J. T.**, Lansley, G., Lan, T., and Longley, P. A. Using the spatial analysis of family names to gain insight into demographic change. *Proceedings of the 27th Conference of GIS Research UK (GISRUK)*. Newcastle: Newcastle University.

Lan, T., Lansley, G., **Van Dijk, J. T.**, and Longley, P. A. Geocoding historical census records in England and Wales. *Proceedings of the 27th Conference of GIS Research UK (GISRUK)*. Newcastle: Newcastle University.

2016 **Van Dijk, J. T.** and Krygsman, S. C. Mobile technologies for data collection in sub-Saharan Africa: An outlook to the future of mobility research. *#CelebrateGeography: Proceedings of the 11th Biennial Conference of the Society of South African Geographers (SSAG 2016)*. Stellenbosch: SunMedia. 180-189.

2015 **Van Dijk, J. T.** and Krygsman, S. C. Gathering individual travel data with GPS-enabled smartphones: A proof of concept study. *Proceedings of the 34th Southern African Transport Conference (SATC 2015)*. Pretoria: Southern Africa Transport Conference. 448-460.

Professional Publications

2010 **Van Dijk, J. T.** and De Jong, T. Medische voorzieningen in kaart. Bereikbaarheid medische voorzieningen in Bushbuckridge, Maruleng en Sekhukhune [Accessibility of Medical services in Bushbuckridge, Maruleng and Sekhukhune]. *Geografie* 19 (5): 18-20.

Authored Books

2017 **Van Dijk, J. T.** Designing Travel Behaviour Change Interventions: a spatiotemporal perspective [Ph.D. dissertation]. Stellenbosch: Stellenbosch University. Persistent URL: hdl.handle.net/10019.1/102809

Research and Travel Grants

- 2022 ESRC Ph.D. Studentship, UBEL DTP. Co-funded by Didobi Limited. "Real-time geodemographics for business and service planning."
£ 57,984 / 3 years (co-I, PI: P. A. Longley)
- 2021 The British Academy Talent Development Award Scheme 2021
£ 9,919.47 / 1 year (PI, co-I: S. Law, A. Musah) Ref: TDA21\210069
- ESRC Ph.D. Studentship, UBEL DTP. Co-funded by Gamble Aware. "Geographies of harmful gambling behaviour and their remediation".
£ 57,761 / 3 years (co-I, PI: P. A. Longley)
- 2020 Frank Carter Travel Fund, University College London
£ 550
- 2016 Postgraduate travel grant, National Research Foundation South Africa
ZAR 24,222
- 2015 NRF-DST innovation scholarship, National Research Foundation and Department of Science and Technology South Africa
ZAR 330,000 / 3 years
- Stellenbosch merit bursary, Stellenbosch University
ZAR 50,000 / 2 years
- 2014 Scholarship award for full-time doctoral studies, Stellenbosch University
ZAR 390,000 / 3 years

Created Research Datasets

- 2021 *Migration Model, 1997 – 2020*
The Migration Model is a dataset that ascribes records pertaining to individuals that vacate a property to their most probable destination address, using a UK-wide population data set: the Linked Consumer Registers. The dataset comprises circa 42 million records. Access to this dataset can be secured through the Consumer Data Research Centre (data.cdrc.ac.uk).
- 2021 *Linked Consumer Registers, 1997 – 2020*
The Linked Consumer Registers are a dataset that contain the names and addresses for adults in the UK in annual snapshots from 1997 onwards to 2020. They are compiled from reported outputs from linking public versions of the electoral roll and consumer registers (supplied by value-added resellers). The dataset comprises circa 141 million records. Access to this dataset can be secured through the Consumer Data Research Centre (data.cdrc.ac.uk).

Teaching Experience

2021 – Present

Lecturing, University College London

- GEOG0114: Principles of Spatial Analysis (M.Sc.).
Module page: jtvandijk.github.io/GEOG0114/
- GEOG0163: Data, Politics and Society (M.Sc.). *Module convenor*.
Module page: jtvandijk.github.io/GEOG0163/
- GEOG0030: Geocomputation (B.Sc.). *Module convenor*.
Module page: jtvandijk.github.io/GEOG0030/
- GEOG0014: Geography in the Field II.
- Principal dissertation supervisor B.Sc. students
- Principal dissertation supervisor M.Sc. students (3)

2020 – 2021

Lecturing, University College London

- GEOG0114: Principles of Spatial Analysis (M.Sc.).
Module page: jtvandijk.github.io/GEOG0114_20202021/
- GEOG0125: Advanced Topics in Social and Geographic Data Science (M.Sc.).
Module page: jtvandijk.github.io/GEOG0125_20202021/
- POLS0008: Introduction to Quantitative Research Methods (B.Sc.).
Module page: jtvandijk.github.io/POLS0008_20202021/
- Principal dissertation supervisor of M.Sc. students (2)

2019 – Present

High-school Student Supervision, Nuffield Foundation

Supervision of first-generation prospective university students as part of the annual Nuffield Future Researchers widening participation work experience programme.

2019

Seminar Speaker, University College London

Co-organiser and speaker in the “Technical Tuesdays” Seminar Series on methods and techniques for quantitative researchers. Module material: github.com/jtvandijk/TechnicalTuesdays

2014 – 2017

Lecturing, Stellenbosch University

- Spatial Accessibility and Transport Network Analysis (B.Sc. Hons, M.Sc.)
- Secondary dissertation supervisor of two B.Sc. Hons students

2013

Lecturing, Utrecht University

- Introduction to Human Geography and Planning (B.Sc.)
- Research Methods and Techniques (B.Sc.)
- Introduction to Geographic Information Systems (B.Sc.)
- Advanced Geographic Information Systems (B.Sc., M.Sc.)
- Principal dissertation supervisor of three B.Sc. students

2012

Teaching Assistant, Stellenbosch University

- Spatial Accessibility and Transport Network Analysis (B.Sc. Hons, M.Sc.)

- 2009 - 2012 **Teaching Assistant**, Utrecht University
- Introduction to Geographic Information Systems (B.Sc.)
 - Advanced Geographic Information Systems (B.Sc., M.Sc.)
 - Transport Geography (B.Sc.)
 - Honours College Geosciences (B.Sc.)

Ph.D. supervision

- 2022 - Present **Secondary Supervisor**, University College London
Mikaella Mavrogeni on the topic of "Real-time geodemographics for business and service planning". *Project commencing October 2022.*
- 2021 - Present **Secondary Supervisor**, University College London
Shunya Kimura on the topic of "Geographies of harmful gambling behaviour and their remediation".

Ph.D. examination

- 2021 **Ph.D. upgrade**, University College London
Louise Sieg on the topic of "New Forms of Data and Geodemographics: Evaluation and regionalisation of big mobile phone datasets"
- 2020 **Ph.D. upgrade**, University College London
Jakub Wyszomierski on the topic of "Hybrid geodemographics and creation of the 2021 Output Area Classification"

Invited talks and Conference Presentations

- 2022 "Harder, better, faster, stronger. Exploring GPU-based analysis for social and geographic applications". Talent Development Award Induction Day. *The British Academy, United Kingdom, May 11, 2022.*
- "What's in a name? Visualising surname geographies in a GIS environment". International Spring School on Visualization (ISSonVis). *Palacký University Olomouc, Czech Republic, April 7, 2022.*
- "Harder, better, faster, stronger. Exploring GPU-based analysis for social and geographic applications". Human Geography Seminar Series Department of Geography. *University College London, United Kingdom, March 15, 2022.*
- 2021 "New data on equality, exclusion and social change in London and the UK". Levelling Up and London, London Research and Policy Partnership *London, United Kingdom, September 17, 2021.*
- "Developing a data infrastructure for bespoke demographic analysis". 29th Conference of GIS Research UK. *Cardiff, United Kingdom, September 14 – September 16, 2021.*

- 2020 "Applied Geoinformatics: Insights into human mobility patterns". Guest lecture Department of Physical Planning [online]. *School of Architecture and Planning New Delhi, India, October 29, 2020.*
- 2019 "Platial geo-temporal demographics using family names". 2nd International Symposium on Platial Information science. *Coventry, United Kingdom, September 5 – September 6, 2019.*
- "Using the spatial analysis of family names to gain insight into demographic change". 27th Conference of GIS Research UK. *Newcastle, United Kingdom, April 23 – April 26, 2019.*
- 2017 "Using GPS-enabled smartphones for Voluntary Travel Behaviour Change interventions". Guest lecture Utrecht University Summer School on "GPS data analysis". *Utrecht University, the Netherlands, July 12, 2017.*
- 2016 "Mobile data collection techniques in sub-Saharan Africa: An outlook to the future of transport research". 11th Biennial Conference of the Society of South African Geographers. *Stellenbosch, South Africa, September 25 – September 25, 2016.*
- "Designing a Voluntary Travel Behaviour Change Intervention: Smartphones and Space-Time Accessibility Analysis". Mobile Tartu 2016. *Tartu, Estonia, June 29 – July 1, 2016.*
- "GPS data analysis". Guest lecture Utrecht University in the module "Introduction to GIS". *Utrecht University, the Netherlands, February 18, 2016.*
- 2015 "GPS data analysis". Guest lecture Utrecht University in the module "Introduction to GIS". *Utrecht University, the Netherlands, November 25, 2015.*
- "Gathering individual travel data with GPS-enabled smartphones: A proof of concept study". 34th Southern African Transport Conference. *Pretoria, South Africa, 6 July – July 9, 2015.*
- 2014 "Twenty years of Freedom: The role of the Old Persons Grant in addressing unemployment and inequality in a young democracy". 12th Development Dialogue "Rethinking Democracy". *The Hague, the Netherlands, October 16 – October 17, 2014.*
- "Towards spatial justice: The spatial Equity Effects of a Toll Road in Cape Town, South Africa". World Symposium on Transport and Land Use. *Delft, the Netherlands, June 24 – June 27, 2014.*

Professional Societies

- 2021 – Present *Fellow of the Royal Geographical Society (with Institute of British Geographers)*
Member of the RGS-IBG GIScience Research Group.

Community Service and Engagement

- 2022 - Present *Undergraduate Admissions Tutor*
Admissions Tutor for the Undergraduate programmes in UCL geography. Part of my remit involves a strong focus on widening participation as well as outreach to schools located in widening participation areas.
- 2022 *Session organiser RGS-IBG Annual International Conference*
Organiser for two sessions in the RGS-IBG International Conference on "Dealing with uncertainty: Quality and Representation in the context of Big Data". Newcastle, United Kingdom, August 29 – September 2, 2022.
- 2021 – Present *Committee member RGS-IBG GIScience Research Group*
Organisation and promotion of the events of the RGS-IBG GIScience Research Group, including a webinar series and RGS Annual Conference session.
- 2021 *Data for Policy conference*
Session chair. "Informing policy for region and cities: data approaches for timely and granular evidence" London, United Kingdom, September 16, 2021.
- 2021 *Consumer Data Insights for Housing Policy Workshop*
Presentation and participation in stakeholder workshop to showcase work on housing and residential mobility. London, United Kingdom, June 26, 2021.
- 2020 – Present *Under One Sky*
Volunteering. Provision of food and assistance to the homeless community living on the streets of London.
- 2014 – 2015 *Social Sciences for Development conference*
Member of the local organising committee at Stellenbosch University for the 2015 Social Sciences for Development conference.

Web Development

- 2019 – 2021 *Gamble Aware*
Data analysis, web mapping, and visualisation of the geographical distribution of supply and demand for treatment and support for problematic gamblers. Latest maps are available through:
www.begambleaware.org/gambleaware-gb-maps
- 2018 – 2022 *GBNames*
GBNames explores the spread of family names across Great Britain, using historic censuses and recent consumer registers, and links surnames to consumer data statistics. Website available through:
apps.cdrc.ac.uk/gbnames/

External Projects

2021	<i>World Bank</i> Generation of travel time indicators and market access indicators for small administrative units in Ethiopia. This project is part of a wider study conducted by the World Bank that aims to identify and tackle deeply rooted binding constraints that could hamper the gains of economic growth being spread evenly across regions and between rural and urban areas.
2020	<i>UCL, Bloomsbury and East London Doctoral Training Partnership</i> Scoping study, consisting of both desk research and in-person interviews, to identify potential factors and themes that underpin successful partnerships and collaborations between academia and industry.
2019	<i>Greater London Authority</i> Preparation of selected data products on ethnicity, population churn, migration, and social mobility for the Greater London Authority.
2016 – 2017	<i>Harambee Youth Employment Accelerator</i> Data analysis using well-known statistical techniques as well as more advanced machine learning classifiers for Harambee Youth Employment Accelerator to better understand, and possibly predict, successful job placements.
2009	<i>AfriScope</i> Contributions to a study on the accessibility of government services in the Integrated Sustainable Rural Development (ISRD) Nodes in South Africa.

Review

2022	Transportation Research Record
2021	Transactions in GIS Environment and Planning B: Urban Analytics and City Science
2020	Computers, Environment, and Urban Systems Journal of Transport Geography Transactions in GIS
2019	Transactions in GIS Journal of Transport Geography The Israel Science Foundation (Grant review) Journal of Traffic and Transportation Engineering
2018	Journal of Transport Geography Computers, Environment, and Urban Systems
2016	Area Development and Policy
2015	Journal of Transport and Land Use

Media coverage

- 2021 The Economist. Britain's inequalities are spelt out in its surnames. Nov 20, 2021; Vol. 442 (9272)
- UCL News. Social mobility is influenced by where ancestors lived [Online]. <https://www.ucl.ac.uk/news/2021/oct/social-mobility-influenced-where-ancestors-lived>

Core Technical Skills

<i>Geographic Information Systems</i>	R, Python, Q-GIS, ESRI suite
<i>Data processing</i>	R, Python, Unix shell, GNU Parallel
<i>Data analysis</i>	R, Python
<i>Data visualisation</i>	ggplot2
<i>Project management</i>	Git, GitHub
<i>Web mapping</i>	Leaflet.js
<i>Web development</i>	HTML, CSS, JavaScript, Django
<i>Database management</i>	PostgreSQL, PostGIS
<i>Typesetting</i>	LaTeX, markdown, rmarkdown, bookdown

Language Proficiency

Dutch	Native proficiency
English	Full professional proficiency
isiXhosa	Basic conversational proficiency

References

- Professor Paul Longley
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- Professor James Cheshire
Professor of Geographic Information and Cartography, University College London
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- Dr Jens Kandt
Associate Professor Urban Geography and Data Science, Centre for Advanced Spatial Analysis
E j.kandt@ucl.ac.uk **T** +44 20 3108 3880