

JUSTIN T. VAN DIJK

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Profile

Human Geographer. Data scientist. Teacher. Interested in urban analytics, geo-demographics, urban transport, spatial inequalities, 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, including experience with Python programming, R scripting, and PostgreSQL/PostGIS.

Present appointments

- 2020 - Present** **Teaching Fellow**, University College London
Department of Geography. Teaching Fellow in Quantitative Social Science. Part-time appointment. Contributing to the M.Sc. courses *Principles of Spatial Analysis* and *Advanced Topics in Social and Geographic Data Science* as well as the undergraduate course *Introduction to Quantitative Research Methods*.
- 2018 - Present** **Postdoctoral Research Associate**, University College London
Department of Geography. Research Associate in the Geospatial Analytics and Computing Research Group. Analysis and visualisation of big spatial population data sets with a strong focus on geo-demographics, internal migration, and inter-generational social mobility.

Previous appointments

- 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. Thesis: Designing Travel Behaviour Change interventions: A spatiotemporal perspective.
- 2011 - 2013 **Master of Science**, Utrecht University. GPA 4.0. **Cum Laude**.
Human Geography and Planning. Thesis: 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. Thesis: Contemporary Orientalism? Representations of Islam and Muslims in the Dutch Press: a content analysis of 'De Volkskrant' and 'De Telegraaf', 2001-2010.

Refereed publications: International journals

- 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
- 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
- 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. Publication. doi: 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 System* 70: 84-101. doi: 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: 10.1080/19475683.2017.1340340
- 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: 10.1080/10630732.2017.1400814
- 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

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

Refereed publications: Under consideration

- 2021 **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)*. Under a second round of review.
- Lan, T., **Van Dijk, J. T.**, and Longley, P. A., Cities as Platforms for Social Mobility in Great Britain, 1881-1901. *Urban Studies*. Under a second round of review.

Refereed publications: 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*. Cheltenham: Edward Elgar Publishing Ltd. In press.
- 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.

Refereed publications: Conference proceedings

- 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. Forthcoming.
- 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. Forthcoming.
- 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. Forthcoming.
- 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

- 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 [dissertation]. Stellenbosch: Stellenbosch University. Persistent URL: <http://hdl.handle.net/10019.1/102809>

Research and travel grants

- 2021 Co-funded and Collaborative Ph.D. Studentship, UBEL DTP
£ 57,761 / 3 years
- 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 – 2016*
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. 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 143 million records. Access to this dataset can be secured through the Consumer Data Research Centre (data.cdrc.ac.uk).

Teaching experience

- 2020 – Present **Lecturing**, University College London
- GEOG0114: Principles of Spatial Analysis (M.Sc.). Course page: <https://jtvandijk.github.io/GEOG0114/>
 - GEOG0125: Advanced Topics in Social and Geographic Data Science (M.Sc.). Course page: <https://jtvandijk.github.io/GEOG0125/>
 - POLS0008: Introduction to Quantitative Research Methods (B.Sc.). Course page: <https://jtvandijk.github.io/POLS0008/>
 - Thesis supervision of two M.Sc. students
- 2019 - Present **High-school Student Supervision**, Nuffield Foundation
Supervision of first-generation prospective university students for the annual Nuffield Future Researchers widening participation programme.
- 2019 **Seminar Speaker**, University College London
Co-organiser and speaker in the “Technical Tuesdays” Seminar Series on methods and techniques for quantitative researchers. Course material: <https://github.com/jtvandijk/TechnicalTuesdays>

2014 - 2017 **Lecturing**, Stellenbosch University
 - Spatial Accessibility and Transport Network Analysis (B.Sc. Hons, M.Sc.)
 - Thesis advisor 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.)
 - Thesis 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. examination

2020 **Ph.D. upgrade**, University College London
 Member of upgrade committee for Jakub Wyszomierski (UCL Geography).

Guest lectures and invited research seminars

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 "What's in a name? Storing surname geographies for both visualisation and analysis". Guest lecture Graduate School Economic and Management Sciences. *Stellenbosch University, South Africa, March 8, 2019.*

2018 "What's in a name? Storing surname geographies for both visualisation and analysis". Research seminar Geo+Data London (AGI/CDRC event). *University College London, United Kingdom, December 4, 2018.*

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 "GPS data analysis". Guest lecture Utrecht University in the course "Introduction to GIS". *Utrecht University, the Netherlands, February 18, 2016.*

2015 "GPS data analysis". Guest lecture Utrecht University in the course "Introduction to GIS". *Utrecht University, the Netherlands, November 25, 2015.*

Papers presented at international conferences

- 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.*
- 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.*
- 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.*
- 2015 "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.*
- 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.*

Community service

- 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 – Present *Gamble Aware*
Data analysis, web mapping, and visualisation of the geographical distribution of supply and demand for treatment and support for problematic gamblers. Maps: <https://www.begambleaware.org/mapping-problem-gambling-severity>

2018 - Present *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. The latest version of the website is accessible through: apps.cdrc.ac.uk/gbnames/

External projects

2021 - Present *World Bank*

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 *UBEL DTP*

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 *Greater London Authority*

Preparation of selected data products on ethnicity, population churn, migration, and social mobility for the Greater London Authority.

2016 – 2017 *Harambee Youth Employment Accelerator*

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 *AfriScope*

Contributions to a study on the accessibility of government services in the Integrated Sustainable Rural Development (ISRD) Nodes in South Africa.

Review

2021 Transactions in GIS

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

2016 Computers, Environment, and Urban Systems
Area Development and Policy
2015 Journal of Transport and Land Use

Core technical skills

<i>Geographic Information Systems</i>	R, Python, Q-GIS, ArcGIS
<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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Dr Neil Rankin
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E neil@predictiveinsights.net T +27 83 296 0907

Dr Egbert van der Zee
Assistant Professor Human Geography and Spatial Planning, Utrecht University
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