

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 appointment

2018 - Present **Postdoctoral Research Associate**, University College London
Department of Geography. Geospatial Analytics and Computing Research Group. Working on the analysis and visualisation of big spatial population data sets with a strong focus on geo-demographics, internal migration, and intergenerational social mobility.

Previous appointments

2014 - 2017 **Junior Lecturer** (part-time), Stellenbosch University
Department of Logistics.

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 journal publications

2020 **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 review.

Van Dijk, J. T. and Longley, P. A. Interactive display of surname distributions in historic and contemporary Great Britain. *Journal of Maps* 169(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*. Advance Online Publication. 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 book chapters

2020 **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. Forthcoming.

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 conference proceedings

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

2020 Frank Carter Travel Fund, University College London
£ 550

2016 Postgraduate travel grant, National Research Foundation
ZAR 24,222

2015 NRF-DST innovation scholarship, National Research Foundation and Department of Science and Technology
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

Teaching experience

2019 **Seminar Speaker**, University College London
Co-organiser and speaker in the "Technical Tuesdays" Seminar Series on methods and techniques for quantitative researchers. GitHub: <https://github.com/jtvandijk/TechnicalTuesdays>

2014 - 2017 **Part-time Lecturing**, Stellenbosch University
- Spatial Accessibility and Transport Network Analysis (B.Sc. Hons, M.Sc.)
- Thesis advisor for two B.Sc. Hons students

- 2013 **Lecturing**, Utrecht University
- Introduction to Human Geography and Planning (B.Sc.)
 - Methods and Techniques (B.Sc.)
 - Introduction to Geographic Information Systems (B.Sc.)
 - Advanced Geographic Information Systems (B.Sc., M.Sc.)
 - Thesis advisor for 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.)

Guest lectures and invited research seminars

- 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.*

Enabling roles

2019 - Present *Nuffield Research Placement supervision*
Supervision of first-generation prospective university students.

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.

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

- 2020 - Present *UBEL-DTP*
Preparation of a scoping report on the proposals of 28 co-funded and collaborative studentships that have been taken on by UBEL DTP between 2018 and 2020. This scoping study seeks to identify potential factors and themes that underpin successful partnerships and collaborations with industry partners.
- 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.
- 2016 - 2017 *Human Sciences Research Council*
Contributions project proposal for funding the establishment of a nationally representative cell phone panel of South Africans.
- 2009 *AfriScope*
Contributions to a study on the accessibility of government services in the Integrated Sustainable Rural Development (ISRD) Nodes in South Africa.

Volunteering experience

- 2020 - Present *Under One Sky*
Emergency food delivery for homeless people left out on London's streets during the COVID-19 lockdown for two evenings a week. Provision of meals and assistance to rough sleepers.

Review

- 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

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>	ggplot
<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
<i>Typesetting</i>	LaTeX

Language proficiency

Dutch	Native proficiency
English	Full professional proficiency
isiXhosa	Basic conversational proficiency

References

Professor Paul Longley
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Data scientist, Predictive Insights*
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