



# Lucas van der Meer

DOCTORAL RESEARCHER IN GEOINFORMATICS

Salzburg, Austria

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*I am a doctoral researcher in geoinformatics at the University of Salzburg. I obtained a bachelor degree in Environmental & Infrastructure Planning from the University of Groningen, and a combined master degree in Geospatial Technologies from the universities of Lisbon, Castellon, and Münster. I am particularly interested in the application of geospatial data science to address socio-technical challenges regarding sustainable mobility, transport accessibility and livable cities.*

## Employment

### Doctoral Researcher

Salzburg, Austria

UNIVERSITY OF SALZBURG, DEPARTMENT OF GEOINFORMATICS, MOBILITY LAB

November 2023 — Present

- Investigating how the design of public space can provide us with pleasurable experiences during movement, how this affects our perceptions of accessibility, and how we can integrate these findings into quantitative frameworks for accessibility assessment within urban digital twins.

### Geospatial Developer

Linz, Austria

TRIPLY GMBH

May 2019 — August 2024

- Creating and extending methods to analyze and improve sustainable transport accessibility in urban and rural regions.
- Developing data-based solutions for enterprises to support sustainable corporate mobility.
- Solving vehicle routing problems to optimize the efficiency of sustainable transportation alternatives to companies and events.

### Research Assistant

Salzburg, Austria

UNIVERSITY OF SALZBURG, DEPARTMENT OF GEOINFORMATICS, MOBILITY LAB

July 2022 — October 2023

- Developing software and methods for the automatic assessment of the bikeability of street networks.
- Evaluating the challenges of V2X communication between automated vehicles and bikes in real-world settings.

### Research Assistant

Salzburg, Austria

UNIVERSITY OF SALZBURG, DEPARTMENT OF GEOINFORMATICS, EO ANALYTICS LAB

May 2019 — July 2022

- Developing software and methods for semantic querying of Earth observation data cubes.

### Junior GIS Specialist

Groningen, The Netherlands

UNIVERSITY OF GRONINGEN GEOSERVICE, CENTRE OF INFORMATION TECHNOLOGY

September 2016 — August 2017

- Investigating the spatio-temporal patterns of supply shortage of shared bicycles in The Netherlands.
- Providing assistance to researchers and students in computational spatial analysis tasks.

### Student Assistant

Groningen, The Netherlands

UNIVERSITY OF GRONINGEN, FACULTY OF SPATIAL SCIENCES

September 2015 — January 2016

- For the bachelor courses in Statistics and Spatial Information Technology.

## Education

### Doctoral School of Geoinformatics

Salzburg, Austria

UNIVERSITY OF SALZBURG, DEPARTMENT OF GEOINFORMATICS

2023 —

- Modelling complex geographical systems
- Spatial simulation
- Philosophy of science

### Master of Science in Geospatial Technologies

Lisbon, Portugal & Muenster, Germany

NEW UNIVERSITY OF LISBON, INFORMATION MANAGEMENT SCHOOL

2017 — 2019

UNIVERSITY OF MÜNSTER, INSTITUTE FOR GEOINFORMATICS

- Reproducible spatial data science in R, Python and SQL.
- Geographic information science.
- Geostatistics and spatial statistics.
- Machine Learning and data mining of geospatial big data.
- Remote sensing.
- Geospatial data visualization.
- Project management and academic writing.
- For my master thesis, I created an automated spatio-temporal forecasting system for bike availability in dockless bike sharing systems, using time series forecasting methods. It was supervised by Prof. Dr. Edzer Pebesma. Grade: 20/20.

## Academic minor in Mathematics & Statistics

Groningen, The Netherlands

UNIVERSITY OF GRONINGEN, FACULTY OF SCIENCE AND ENGINEERING & FACULTY OF ECONOMICS AND BUSINESS

2015 – 2016

- Statistics and statistical reasoning.
- Probability theory.
- Calculus and linear algebra.

## Bachelor of Science in Environmental and Infrastructure Planning

Groningen, The Netherlands

UNIVERSITY OF GRONINGEN, FACULTY OF SPATIAL SCIENCES

2013 – 2016

- Spatial information technology.
- Urban planning, environmental planning and water planning.
- Physical geography and economic geography.
- Environmental engineering and transport engineering.
- Applied statistics.
- For my bachelor thesis, I investigated the change of the relative accessibility of peripheral regions in The Netherlands over time, using network analysis tools. It was supervised by Dr. Peter Groote. Grade: 9.5 out of 10.

## Skills

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### Software development

- Programming languages: R, Python, PostgreSQL (with PostGIS extension), Bash
- GIS software: QGIS, ArcGIS, GRASS GIS
- Geospatial tools: GDAL, GEOS, PROJ, Leaflet, OpenStreetMap API, OSRM, OpenTripPlanner, R5, OR Tools
- Reproducible research: Docker, Binder, Git, GitHub, Quarto, Jupyter, Markdown, Latex

### Management, Organization and Teamwork

- I have been active part of interdisciplinary research teams in different countries, both in academia and industry.
- I have organized events in science and in sports, including the GeoMundus Conference 2018 and the Dutch Student Sport Championships 2017.
- I have served as board member of several cycling clubs in The Netherlands.
- I have been an athlete in several cycling teams up to elite level.

### Presenting and Writing

- I have published multiple scientific papers in international journals, including *Information*, and *Remote Sensing*.
- I have presented my work at several international scientific conferences, including GIScience, AGILE, and FOSS4G.
- I have been a columnist for local newspapers and the international cycling news website *Wielerved.nl*.

### Languages

- Native proficiency: Dutch
- Full professional proficiency: English
- Professional working proficiency: German
- Elementary proficiency: French, Spanish, Swedish

## Selected publications

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1. **Van der Meer, L**, Werner, C. & Loidl, M 2024, 'Assessment of bicycle accessibility to mobility hubs under different criteria for cycling network quality', *AGILE GIScience Series*, vol. 5, no. 48. [doi.org/10.5194/agile-giss-5-48-2024](https://doi.org/10.5194/agile-giss-5-48-2024)
2. Werner, C, **Van der Meer, L**, Kazyieva, D, Stutz, P, Wendel, R & Loidl, M 2024, 'Bikeability of road segments: An open, adjustable and extendible model', *Journal of Cycling and Micromobility Research*, vol. 2024, no. 2, 100040. [doi.org/10.1016/j.jcmr.2024.100040](https://doi.org/10.1016/j.jcmr.2024.100040)
3. **Van der Meer, L**, Sudmanns, M, Augustin, H, Baraldi, A & Tiede, D 2022, 'Semantic querying in Earth observation data cubes', *International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences - ISPRS Archives*, vol. 48, no. 4/W1-2022, pp. 503-510. [doi.org/10.5194/isprs-archives-XLVIII-4-W1-2022-503-2022](https://doi.org/10.5194/isprs-archives-XLVIII-4-W1-2022-503-2022)
4. Sudmanns, M, Augustin, H, **Van der Meer, L**, Baraldi, A & Tiede, D 2021, 'The Austrian Semantic EO Data Cube Infrastructure', *Remote Sensing*, vol. 13, no. 23, 4807. [doi.org/10.3390/rs13234807](https://doi.org/10.3390/rs13234807)
5. Abad L & **Van der Meer L** 2018, 'Quantifying Bicycle Network Connectivity in Lisbon Using Open Data', *Information*, vol. 9, no. 11, 287. [doi.org/10.3390/info9110287](https://doi.org/10.3390/info9110287)

## Selected software

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1. **sfnetworks**: Tidy geospatial networks in R. [github.com/luukvdmeer/sfnetworks](https://github.com/luukvdmeer/sfnetworks)
2. **netapy**: Assessing street network suitability for sustainable transport modes. [github.com/plus-mobilitylab/netapy](https://github.com/plus-mobilitylab/netapy)
3. **semantique**: Semantic querying in Earth observation data cubes. [github.com/ZGIS/semantique](https://github.com/ZGIS/semantique)

## Selected awards

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1. **Best Presentation Award** at the Cycling Research Board Annual Meeting 2023 for the talk *Happiness is in the journey: A different view on measuring accessibility in the cycling city*.
2. **Best Poster Award** at the GIScience Conference 2023 for the poster *Towards human-centric metrics for urban bikeability*.
3. **Outstanding Regular Talk Award** at the UseR! Conference 2021 for the talk *Tidy Geospatial Networks in R*.
4. **Best Student Award** for the Master of Science in Geospatial Technologies, 2017-2019.

## References

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1. **Dr. Martin Loidl:** University of Salzburg, Department of Geoinformatics. Contact: [martin.loidl@plus.ac.at](mailto:martin.loidl@plus.ac.at)
2. **Prof. Dr. Dirk Tiede:** University of Salzburg, Department of Geoinformatics. Contact: [dirk.tiede@plus.ac.at](mailto:dirk.tiede@plus.ac.at)