

# Alex Levering

POSTDOCTORAL RESEARCHER AT VRIJE UNIVERSITEIT AMSTERDAM

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## Education

### Wageningen University & Research

PHD CANDIDATE, *cum laude*

- Advisor: Prof. Devis Tuia
- Thesis: *Landscape quality assessments using deep learning*

Wageningen, the Netherlands

09/2019 - 01/2024

### EPFL ALPOLE

VISITING STUDENT

- Advisor: Prof. Devis Tuia
- Monitoring liveability in the Netherlands through optical remote sensing

Sion, Switzerland

06/2023 - 09/2023

### University of Washington in St. Louis

VISITING STUDENT

- Advisor: Nathan Jacobs
- Assessing how vision-language AI models can improve the prediction efficiency of landscape qualities

St. Louis, United States

11/2022 - 05/2023

### Wageningen University & Research

MSc GEO-INFORMATION SCIENCE AND REMOTE SENSING, *cum laude*

- Specialization in spatial data analytics (geo-scripting, machine-learning, advanced remote sensing)
- Thesis advisor: Prof. Devis Tuia
- thesis: *Detecting Physical Incidents Relating to Road Networks from Street-Level Imagery - summa cum laude*

Wageningen, the Netherlands

09/2016 - 01/2019

### University of Melbourne

VISITING STUDENT

- Advisor: Prof. Martin Tomko
- Researching the prediction of objects obstructing the driving surfaces for the robustness of self-driving vehicles

Melbourne, Australia

02/2018 - 09/2018

### HZ University of Applied Sciences

BASc DELTA MANAGEMENT

- Water management degree with a focus on process & project management
- Minor in geo-information sciences at Wageningen University & Research
- Thesis advisor: Dr. Joost Stronkhorst
- Thesis: *Coastal Erosion Detection using the Coastal Hazard Wheel Methodology - summa cum laude*

Vlissingen, the Netherlands

09/2012 - 07/2016

## Professional Experience

- 11/2023 - present **Postdoctoral researcher**, Vrije Universiteit Amsterdam
- 01/2019 - 08/2019 **Advisor Data & Information**, Antea Group
- 2013 - 2019 **Freelance GIS consultant & lecturer**, IHS, Erasmus University, Rotterdam
- 02/2016 - 07/2016 **BASc thesis intern**, Deltares, Delft

## Awards

- 2016 **HZ Stern for best BASc thesis of academic year**, HZ University of Applied Sciences

## Teaching Experience

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2024	<b>Methods of Environment and Resource Management</b> , Lectured and coordinated a MSc-level introduction to spatial analysis module worth 3 ECTS	WUR
2023	<b>Advanced Spatial Analysis</b> , Assisted in practicals and grading (10hrs)	VU Ams.
2020-2022	<b>Machine Learning (FTE-35306)</b> , Assisted in practicals and grading ( 7.5hrs per year)	WUR
2019	<b>Basic Remote Sensing &amp; Python Programming</b> , Externally hired for lectures on the basics of remote sensing and programming (15hrs)	IHS Erasmus University
2015-2019	<b>Basics of GIS</b> , Externally hired for recurring lectures on a variety of GIS topics, including QGIS and ArcGIS lectures ( 25hrs total))	IHS Erasmus University

## Mentoring

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2024	<b>Hamed Ahadi, MSc thesis</b> , <i>Revisiting semantic bottlenecks for remote sensing using Bayesian approaches</i> Primary supervisor	VU Ams.
2023	<b>Kim van Hoeve, MSc thesis</b> , <i>Unraveling landscape scenicness with deep learning - On the relation between weather, image aesthetics, and scenicness</i> Primary supervisor	WUR
2023	<b>Antonia Skarli, MSc thesis</b> , <i>Transient attributes - Could the weather affect our subjective perception of an urban place?</i> Primary supervisor	WUR
2021	<b>Tara Kraaieveld, MSc thesis</b> , <i>Calculated experiences: using deep learning for perceived livability in Amsterdam</i> Primary supervisor	WUR

## Skills

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### LANGUAGES

**Dutch:** native language

**English:** fluent (C2, TOEFL: 118/120)

**German:** conversational

### Notions of French and Mandarin PROGRAMMING

**Python:** Primary language, 10 years of experience

**Analytics:** PyTorch (Lightning), NumPy, scikit-learn, (Geo)Pandas, GDAL, RasterIO

**JavaScript:** Infrequent user, 1 year of experience

**Linux / Bash:** 8 years of low-intensity use

**R:** 8 years of infrequent use

**GIS:** ArcGIS Desktop, QGIS, PostGIS

**Databases:** MySQL, PostgreSQL

**Design:**  $\text{\LaTeX}$ , HTML, CSS, GIMP, Inkscape

## Outreach & Professional Development ---

### SERVICE AND OUTREACH

- 2016-2018 **Wageningen University MGI programme**, Course review committee member
- 2017-2018 **Wageningen University MGI MSc programme**, Daily board member
- 2013-2015 **HZ Delta Management BASc programme**, Course review committee

**PEER REVIEW** I review mainly for technical remote sensing and geo-information science journals and conferences, among which *Remote Sensing of Environment* (RSE), the ISPRS Journal of Photogrammetry and Remote Sensing, IEEE Transactions on Geoscience and Remote Sensing (TGRS), and the the International Geoscience and Remote Sensing Symposium (IGARSS).

## Publications ---

### JOURNAL PAPERS

- Levering, A., Marcos, D., van Vliet, J., Tuia, D., 2023. *Predicting the liveability of Dutch cities with aerial images and semantic intermediate concepts*. Remote Sensing of Environment 287.
- Levering, A., Marcos, D., Tuia, D., 2021. *On the relation between landscape beauty and land cover: A case study in the U.K. at Sentinel-2 resolution with interpretable AI*. ISPRS Journal of Photogrammetry and Remote Sensing 177.
- Zhu, X.X., Wang, Y., Kochupillai, M., Werner, M., Häberle, M., Hoffmann, E.J., Taubenböck, H., Tuia, D., Levering, A., Jacobs, N., Kruspe, A., Abdulahhad, K., 2022. *Geoinformation Harvesting From Social Media Data: A community remote sensing approach*. IEEE Geoscience and Remote Sensing Magazine 10, 150–180.
- Levering, A., Tomko, M., Tuia, D., Khoshelham, K., 2021. *Detecting Unsigned Physical Road Incidents From Driver-View Images*. IEEE Transactions on Intelligent Vehicles 6.
- Stronkhorst, J., Levering, A., Hendriksen, G., Rangel-Buitrago, N., Rosendahl Appelquist, L., 2018. *Regional coastal erosion assessment based on global open access data: a case study for Colombia*. Journal of Coastal Conservation 22.

### UNDER REVIEW

- Levering, A., Marcos, D., Tuia, D., 2021. *Prompt-guided and multimodal landscape scenicness assessments with vision-language models*. PLOS One.