

Alex Levering

POSTDOCTORAL RESEARCHER AT VRIJE UNIVERSITEIT AMSTERDAM

Hilversum, the Netherlands

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Professional Experience

Vrije Universiteit Amsterdam

ASSISTANT PROFESSOR

Studying socio-cultural landscape qualities and interactions using GIS, remote sensing, and artificial intelligence

Amsterdam, the Netherlands

09/2024 - present

Vrije Universiteit Amsterdam

POSTDOCTORAL RESEARCHER

Semantically-explicit building change detection for understanding urban development using remote sensing images

Amsterdam, the Netherlands

11/2023 - 09/2024

Antea Group

ADVISOR DATA & INFORMATION

Deventer, the Netherlands

01/2019 - 08/2019

IHS, Erasmus University

FREELANCE GIS CONSULTANT & LECTURER

Rotterdam, the Netherlands

2013-2019

Deltares

BASC THESIS INTERN

Delft, the Netherlands

02/2016 - 07/2016

IHS, Erasmus University

INTERN URBAN ECONOMICS RESEARCHER

Delft, the Netherlands

02/2015 - 07/2015

Education

Wageningen University & Research

PHD CANDIDATE, *cum laude*

- Advisors: Prof. Devis Tuia & Dr. Diego Marcos
- Thesis: *Landscape quality assessments using deep learning*

Wageningen, the Netherlands

09/2019 - 01/2024

Ecole Polytechnique Fédérale de Lausanne (EPFL)

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: Prof. 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 advisors: Prof. Martin Tomko & 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

Melbourne, Australia

VISITING STUDENT

02/2018 - 09/2018

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

HZ University of Applied Sciences

Wageningen, the Netherlands

BASC DELTA MANAGEMENT

09/2012 - 07/2016

- 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*

Awards

- 2024 **Cum laude recognition of PhD thesis (top 3%),** Wageningen University
- 2019 **Summa cum laude recognition of MSc thesis,** Wageningen University
- 2016 **HZ Stern for best BSc thesis of academic year,** HZ University of Applied Sciences
- Summa cum laude recognition of BSc thesis,** HZ University of Applied Sciences

Teaching Experience

2024-present

Methods of Environment and Resource Management (MSc), *VU Amsterdam*

Course coordinator, and lecturing a MSc-level introduction to spatial analysis module as well.
6 ECTS

Big Data in Sustainability Science (MSc), *VU Amsterdam*

Course co-coordinator, and lecturing on geospatial machine learning.
3 ECTS

2023

Advanced Spatial Analysis (MSc), *VU Amsterdam*

MSc-level course on programming and spatial data analysis, where I assisted in practicals and grading.
10 hours

2020-2022

Machine Learning FTE-35306 (BSc/MSc), *Wageningen University*

BSc/MSc Intro to machine learning class, where I assisted in practicals and grading.
10 hours yearly

2019

Remote Sensing & Python Programming (MSc), *IHS Erasmus University*

Externally hired for MSc-level lectures on remote sensing and programming.
15 hours

2015-2019

Introduction to GIS (MSc), *IHS Erasmus University*

Externally hired for a variety of introductory GIS classes, such as ArcGIS and QGIS lectures and practicals.
9 hours yearly

Mentoring

2024-current

Jakob Langenbacher, PhD candidate, *VU Amsterdam*

Re-wilding European forests

Co-supervisor

2023

Kim van Hoeve, MSc thesis, *Wageningen University*

Unraveling landscape scenicness with deep learning - On the relation between weather, image aesthetics, and scenicness

Primary supervisor

2021

Antonia Skarli, MSc thesis, *Wageningen University*

Transient attributes - Could the weather affect our subjective perception of an urban place?

Primary supervisor

Tara Kraaieveld, MSc thesis, *Wageningen University*

Calculated experiences: using deep learning for perceived livability in Amsterdam

Primary supervisor

Skills

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: \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 member

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 AND FULL-LENGTH CONFERENCE PAPERS

- Levering, A.**, Marcos, D., Jacobs, N., Tuia, D., 2024. *Prompt-guided and multimodal landscape scenicness assessments with vision-language models*. PLOS ONE.
- Obadic, I., **Levering, A.**, Pennig, L., Oliveira, D., Marcos, D., Zhu, XX., 2024. *Contrastive Pretraining for Visual Concept Explanations of Socioeconomic Outcomes*. Computer Vision and Pattern Recognition Conference (CVPR) '24 EarthVision workshop.
- 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.
- 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.**, 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.
- 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.