

# Alex Levering

POSTDOCTORAL RESEARCHER AT VRIJE UNIVERSITEIT AMSTERDAM

Hilversum, the Netherlands

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## Professional Experience

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### 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

### Hong Kong University of Science and Technology (Guangzhou)

ADJUNCT ASSISTANT PROFESSOR

Assisting in teaching and guest lectures, seminars, and collaborations with students & staff

Guangzhou, China

01/2025 - 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

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### 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**

Vlissingen, the Netherlands

09/2012 - 07/2016

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*

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**Awards**

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- 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 BASc thesis of academic year**, HZ University of Applied Sciences  
**Summa cum laude recognition of BASc thesis**, HZ University of Applied Sciences

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**Teaching Experience**

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**Current activities****UNIGIS MSc programme coordinator**, VU Amsterdam, 2025-present

Post-graduate MSc programme coordinator, facilitating student study progress  
0.2 FTE

**Climate Data Science (MSc)**, VU Amsterdam

Teaching an introduction to deep learning for geospatial sciences  
1 ECTS

**Big Data in Sustainability Science (MSc)**, VU Amsterdam, 2024-present

Course co-coordinator and lecturer, geospatial programming  
2.5 ECTS

**Methods of Environment and Resource Management (MSc)**, VU Amsterdam, 2024-present

Course coordinator, and teaching a MSc-level introduction module to spatial analysis  
6 ECTS

**Research Project Global Environmental Change & Policy (MSc)**, VU Amsterdam

Teaching parts of a MSc-level course on academic proposal writing  
1.2 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

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### **PhD students**

#### **Jakob Langenbacher, VU Amsterdam, 2024-current**

Re-wilding European forests

Co-promotor

#### **Zheyu Zhang, VU Amsterdam, 2025-current**

Building an urban model for African cities

Co-promotor

#### **Alina Cherkas, VU Amsterdam, 2025-current**

Deep learning solutions for SDG 11

Co-promotor

### **MSc & BSc students**

#### **Vrije Universiteit Amsterdam, 2024-present**

Supervised a total of 13 students across 4 programmes (MSc ERM, MSc AI, MSc GECP, BSc AED) on GIS, AI, and computer vision topics

#### **Wageningen University, 2021-2023**

Supervised 3 MSc GIS students total on remote sensing and computer vision topics

## Skills

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### LANGUAGES

**Dutch:** native language

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

**German:** conversational

Notions of French and Mandarin Chinese

### PROGRAMMING

**Python:** Primary language, 12 years of experience

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

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

**Linux / Bash:** 10 years of low-intensity use

**R:** 10 years of infrequent use

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

**Databases:** MySQL, PostgreSQL

**Design:** L<sup>A</sup>T<sub>E</sub>X, HTML, CSS, GIMP, Inkscape, Illustrator, Lightroom

## Outreach & Professional Development

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### SERVICE AND OUTREACH

- 2024-2025 **VU Amsterdam UNIGIS programme**, Programme committee member  
2016-2018 **Wageningen University MGI programme**, Programme committee member  
2017-2018 **Wageningen University MGI MSc programme**, Daily board member  
2013-2015 **HZ Delta Management BASc programme**, Programme 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), the International Geoscience and Remote Sensing Symposium (IGARSS), and the Computer Vision and Pattern Recognition (CVPR) EarthVision workshop. I also review topically-suitable papers on urban studies, such as liveability and walkability, in relevant journals.

## Publications

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### 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.