Rik J.G. Nuijten

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Over 5 years experience in drone-based remote sensing, machine learning and data fusion for the assessment and management of forest ecosystems. Produced related best practices guides and science that continues to be operationalized. Has instructed and created materials for students in post-secondary education related to geospatial data analysis and data science.

Applied Skills

Remote Sensing	Photogrammetric processing, point cloud modelling, multispectral image analysis, drone data acquisition, field sampling techniques
Data Science	Data visualization, predictive modelling, unsupervised learning, object detection, spatial pattern analysis, scripting in Python & R

Soft Skills

Communication	Effective graphic design, reporting, and presentation
Languages	English, Dutch
Methodological	Analytical, creative problem-solving, organized
Personal	Accountable, adaptable, enthusiastic, reliable, respectful
Social	Conflict resolution, inclusive, positive, team-building

Experience

PhD – Remote Sensing in Forestry *May 2019 — June 2024*
UBC (Faculty of Forest Resources Management *Vancouver (CA)*
- Explored the capabilities, limitations, and opportunities of drone-based remote sensing in assessing ecosystem recovery, with a specific focus on digital aerial photogrammetry.

Teaching Assistant *June 2019 — November 2022*
UBC (Faculty of Forest Resources Management) *Vancouver (CA)*
- Developed labs for Applications in Data Science in Forest Resources (FRST 505).
- Guest lectured in Geospatial Data Analysis with Python (GEM 530).
- Supported graduate students in the MGEM program with research projects involving geospatial information.
- Supervised exercises in Observing the Earth from Space (CONS 127) and Geospatial Data Analysis (GEM 530).

Research Intern *September 2018 — March 2019*
UBC (Faculty of Forest Resources Management) *Vancouver (CA)*
- Investigated the effects of seasonal timing of drone image collection on individual tree detection and mensuration, which was published in a peer-reviewed journal.

Data Analyst *December 2017 — July 2018*
CBRE (Team Research) *Amsterdam (NL)*
- Prepared data and analysis for real estate market outlook reports.

GIS Intern *November 2015 — June 2016*
SWECO (Team Geoweb) *De Bilt (NL)*
- Developed Geoweb (Geocortex Essentials) demo applications.

Grocery Clerk *December 2010 — October 2015*
Albert Heijn *Bergen op Zoom (NL)*

Education

MSc – Geographical Information Management and Application (Cum Laude) *September 2016 — December 2018*
Utrecht University (Faculty of Geosciences) *Utrecht (NL)*
- Investigated the use of drone imagery and object-based image analysis for measuring leafy vegetable crop productivity, which was published in a peer-reviewed journal.
- Took extracurricular courses in Data Management, Python Programming, and Big Data at Wageningen University.

BSc – Human Geography and Spatial Planning *Utrecht (NL)*
Utrecht University (Faculty of Geosciences) *September 2013 — July 2016*
- Pursued a minor in Geo Information at the Vrije Universiteit Amsterdam.

Extra Activities

- Bootcamp Instructor at U.S.R. Triton (*2016 — 2017*)
- Indoor Cycling Instructor at Newstyle Healthcenters (*2017 — 2018*)
- Hosted GIS Career Event for GIMA master program (*2016 — 2017*)

Conferences and Seminar Experience

- Seminar Talk: Surveying keystone plant communities and structures following ecological restoration using drone imagery (9 March 2023, Scion)
- Conference Talk: Mapping vegetation structure, following early regeneration in open boreal forests, using remotely piloted aerial systems (RPAS) based imaging (2 September 2022, ForestSAT)
- Webinar Talk: Monitoring environmental impacts through remote sensing: Innovations and advancements (17 February 2022, Canadian Conservation and Land Management (CCLM) Knowledge Network)

Guides and Peer-Reviewed Publications

Chadwick, AJ, TRH Goodbody, CW Bater, LA Martens, RJG Nuijten, S Smith-Tripp, S Grubinger, et al. 2022. "Best Practice Guide to Acquisition of 3D Imagery from (RPAS)." Vancouver, BC, Canada: Department of Forest Resource Management, Faculty of Forestry, University of British Columbia. https://irss-ubc.github.io/GOA_BPG_PUB/.

Nuijten, RJG, NC Coops, TRH Goodbody, and G Pelletier. 2019. "Examining the Multi-Seasonal Consistency of Individual Tree Segmentation on Deciduous Stands Using Digital Aerial Photogrammetry (DAP) and Unmanned Aerial Systems (UAS)." *Remote Sensing* 11 (7): 739–57.

Nuijten, RJG, NC Coops, CE Prescott, and D Theberge. 2024. "Informing Reclamation Success in Forested Landscapes Using Drone-Based Plant Community Assessments: Enhancing Vegetation Assessments and Reference Site Selection." *Environmental Management* In review.

Nuijten, RJG, NC Coops, D Theberge, and CE Prescott. 2024. "Estimation of Fine-Scale Vegetation Distribution Information from RPAS-Generated Imagery and Structure to Aid Restoration Monitoring." *Science of Remote Sensing* 9: 100114.

Nuijten, RJG, NC Coops, C Watson, and D Theberge. 2021. "Monitoring the Structure of Regenerating Vegetation Using Drone-Based Digital Aerial Photogrammetry." *Remote Sensing* 13 (10): 1942.

Nuijten, RJG, NC Coops, H Zerriffi, and D Theberge. 2024. "Advances in Drone-Based Remote Sensing for Restoration Assessments: Information Uncertainty, Complexity, and Cost-Effectiveness." *Ecological Applications* In review.

Nuijten, RJG, L Kooistra, and GB De Deyn. 2019. "Using Unmanned Aerial Systems (UAS) and Object-Based Image Analysis (OBIA) for Measuring Plant-Soil Feedback Effects on Crop Productivity." *Drones* 3 (3): 54.

References

References available upon request.