

Curriculum Vitae

Darko Radakovic

PhD, Doctoral Program in Environmental Science and Management and Computer Vision
Montclair State University

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Languages: English, Dutch, German, French, Serbo-Croatian.

Education and Qualifications

- VWO OUD (N+G). Juvenaat Heilig Hart, Rooms Katholiek Gymnasium, Bergen op Zoom, Netherlands. May 2008, graduated.
- MINOR ENTREPRENEURSHIP. University of Amsterdam, Amsterdam, Netherlands. 2011.
- BACHELOR WO (Earth Science). University of Amsterdam, Amsterdam, Netherlands. 2012.
 - BSc thesis: map greenness of cities from Landsat imagery.
- MASTER WO (Earth Science). University of Amsterdam, Amsterdam, Netherlands. 2016.
 - MSc thesis: won the “Spin your Thesis!” European Space Agency contest in 2014. An experiment conducted in the Large Diameter Centrifuge at ESTEC investigated the gravitational influences on glacier flow relevant to ice on Mars.
- PhD Environmental Science. Montclair State University, Montclair, NJ USA. 2020-2025.
 - Dissertation: “A Deep Learning Approach for Mapping Shrubs, Wet Tundra and Surface Water in Arctic Tundra with Very High Resolution Satellite Imagery”, submitted to the faculty of Montclair State University in partial fulfillment of the requirements for the degree of Doctor of Philosophy. Defense passed: November 21, 2025.
 - NASA Future Investigators in Earth and Space Sciences (FINESST) investigator: won a FINESST award for 2023-2025, extended.

Awards and Honors

- **European Space Agency (ESA)** Master’s thesis “Spin your Thesis!” Award, 2014.
- **NASA Future Investigators in NASA Earth and Space Science and Technology (FINESST)** Award for research on “*Tall Shrub Expansion as a Driver of Rapid Permafrost Loss in Thermokarst Lakes*”, 2023-2025, extended (award #80NSSC23K1559).

Peer Review

- External reviewer for the IEEE International Conference on Data Mining (ICDM) 2025.

Software Experience

Remote Sensing in Geographic Information System (GIS)

- ArcGIS (profound experience), ERDAS Imagine (profound experience), Google Earth Engine, Sensors: MODIS, Landsat, Maxar (QuickBird, WorldView), Planet Labs, G-LIHT (lidar) and synthetic aperture radar.

Software Development and Modeling language

- JavaScript & PHP (low to moderate experience), C++ (low experience), Shell base (moderate experience), Matlab 2019b (profound experience), Python (moderate to high experience), Machine Learning: Object detection, classification, segmentation, and tracking with TensorFlow, Keras, and Pytorch. Knowledge-Guided Machine Learning (KGML) in LLMs.
 - Experiences setting up pipelines in NASA Center for Climate Simulation (NCCS) Prism GPU Cluster with 87-node GPU cluster, with NVIDIA v100 GPUs, A100 GPUs and H100 GPUs.
 - Deep learning models: Convolutional Neural Network, U-Net, VGG, ResNet and Vision Transformers in both spatial and temporal dimensions.
- Other: Google developer JavaScript, Spark Augmented Reality

Written Outputs

- Radakovic, D. (2026). A Deep Learning Approach for Mapping Shrubs, Wet Tundra and Surface Water in Arctic Tundra with Very High Resolution Satellite Imagery, doctoral dissertation. Available at [Montclair State University Digital Commons](#) from December 2025.
- Radakovic, D., Chopping, M., Cook, B., Varde, A.S., and Robila, S. (2025), A deep learning-based approach for mapping shrubs in Arctic tundra from very high-resolution imagery, submitted to *IEEE Transactions on Geoscience and Remote Sensing*, in review.
- Radakovic, D., Chopping, M., Duchesne, R., Erb, A., Wang, Z., & Schaaf, C. (2025). Temporal Shrub Cover Expansion from High-Resolution Satellite Data: A Comparative Study Using Deep Learning and Meta-Analysis. *NASA ABoVE 11th Science Team Meeting*, Fairbanks, Alaska, May 12 - 15, 2025.
- Radakovic, D., Chopping, M. (2024). Temporal Shrub Cover Expansion from High-Resolution Satellite Data: A Comparative Study Using Deep Learning and Meta-Analysis. *American Geophysical Union 2024 Fall Meeting*, Washington, DC, Dec 9 - 12, 2024.
- Radakovic, D., Chopping, M., Duchesne, R., Erb, A., Wang, Z., & Schaaf, C. (2023). A Deep Learning-Based Approach for Mapping Tall Shrubs in Arctic Tundra. *NASA Carbon Cycles and Ecosystems Joint Workshop* (Washington DC), May 8 – 12, 2023.
- Radakovic, D. Singh A., Varde A. and Pankaj L. (2022). Enriching Smart Cities by Optimizing Electric Vehicle Ride-Sharing through Game Theory, *IEEE International Conference on Tools with Artificial Intelligence (ICTAI)*, 2022, 1–5.
- Radakovic, R. (2015), Analogue Modelling of Flow Dynamics in a Glacier-Like Material, MSc Thesis, University of Amsterdam, Supervisors/Co-Researchers: Dr. Sebastiaan de Vet, Dr. Erik Cammeraat, Dr. Hester Jiskoot. October 15, 2015.

Work Experience

- Freelance programmer. 2009 – 2020. Description: Web development and designs (HTML+Java).
- Developed and deployed LLM (GPT) based customer support chat integrated into live websites.
- Enterprise formation Slalala Salad bar, minor ‘Entrepreneurship. Amsterdam, 2011.
- Won 2nd prize for best student company in Amsterdam 2011/2012 ACE.
- PhD Candidate at Montclair State University. Description: involves the NASA ABoVE project to map tall vegetation in Northern Alaska and study the Arctic albedo effect due to increasing temperatures. September 2020 – 2022.
- Teaching Assistant at Montclair State University (Machine Learning Introduction, Remote Sensing; Hydroclimatology, Planet Labs).
- Early Career NASA scientist as part of NASA's Arctic-Boreal Vulnerability Experiment (ABoVE) team and as a NASA FINESST principal investigator, researching Arctic Tundra vegetation relationship with thawing permafrost by computer vision means from deep learning models (TensorFlow and PyTorch involved for CNN, VGG, ResNet, U-Net and Vision

Transformer) and model calibration and validation of very-high-resolution Maxar and Planet imagery.

Professional Presentations

- Radakovic, D., and Chopping, M.J. (2024). Tall shrub expansion as a driver of rapid permafrost loss in thermokarst lakes, American Geophysical Union Fall meeting, Washington, DC, December 11, 2024 (presenter: Darko Radakovic).
- Radakovic, D., Chopping, M., Duchesne, R., Erb, A., Wang, Z., and Schaaf, C. (2024). A deep learning-based approach for mapping tall shrubs in Arctic tundra, American Association of Geographers annual meeting, Honolulu, HI, April 16-20, 2024 (presenter: Darko Radakovic).
- Chopping, M.J., Radakovic, D., Erb, A., Duchesne, R., Wang, Z., and Schaaf, C. (2023), Mapping Shrub Abundance in Arctic Tundra from the Satellite High Resolution Record and Impacts on Albedo: Validation, Poster Session 2: Wed (May 10) 5:15-7:15 PM. [abstract] [poster] NASA Carbon Cycle & Ecosystems Joint Science Workshop. May 8 - 12, 2023, College Park, MD.
- Radakovic, D. and Chopping, M. J. (2023). A deep learning-based approach for mapping tall shrubs in Arctic tundra, Poster Session 3: Thu (May 11) 3:00-5:00 PM [abstract] [poster]. NASA Carbon Cycle & Ecosystems Joint Science Workshop. May 8 - 12, 2023, College Park, MD.
- Chopping, M.J., Radakovic, D., Erb, A., Duchesne, R., Wang, Z., and Schaaf, C. (2023), Mapping shrub abundance in arctic tundra from the satellite high resolution record and impacts on albedo: validation, poster presentation, 9th ABoVE Science Team Meeting, San Diego, CA, 23 – 36 January, 2023 (abstract + poster).
- Radakovic, D., Chopping, M.J., Duchesne, R., Erb, A., Wang, Z., Schaaf, C., and Ken Tape (2023), A Deep Learning-Based Approach for Mapping Tall Shrubs in Arctic Tundra, poster presentation, 9th ABoVE Science Team Meeting, San Diego, CA, 23 – 36 January, 2023 (abstract + poster).
- Radakovic, D. (2022), Enriching Smart Cities by Optimizing Electric Vehicle Ride-Sharing through Game Theory, Presentation at the Sigma Xi Student Research Symposium, Montclair State University, 2022,
- Radakovic, D., M. Chopping, D. R. Duchesne-Onoro, Z. Wang, and C. Schaaf (2022). An integrated CANAPANI and deep learning-based approach for mapping tall shrubs in Arctic tundra, NASA ABoVE 8th Science Team Meeting, virtual only, May 9 – 13, 2022.
- Chopping, M., D. Radakovic, R. Duchesne-Onoro, Z. Wang, and C. Schaaf (2021). An integrated CANAPANI and deep learning-based high resolution approach for mapping shrubs in Alaskan and Canadian Arctic tundra, NASA ABoVE 7th Science Team Meeting, virtual only, May 11 & 13, 2021.

Extra-curricular Activities

- University of Amsterdam Outreach Program, 2012: lecturing kids in robotics programming.
- Study association GAOS, Amsterdam, NL 2011 – 2016.
- Volunteer work - Stoelenproject Amsterdam for homeless people, NL. 2019.
- Participation in NASA:
 - ABoVE Science Cloud Webinars (multiple).
 - AICOE webinars
 - GSFC AEOIP Webinar Series
 - ABoVE Science Cloud Webinar
 - ASC Webinar - Machine Learning and LVIS data on ADAPT
 - Carbon Monitoring System (CMS) Applications Policy Speaker Series