

# Martin Queinnec

REMOTE SENSING SPECIALIST | PHD

Lausanne, Switzerland (from January 2024)

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*Remote sensing specialist and environmental engineer passionate about translating remote sensing & geospatial data into impactful and actionable insights. Strong experience with LiDAR and multispectral imagery data manipulation and their integration into predictive models.*

## Education

### PhD in Remote Sensing applied to Forestry

Vancouver, Canada

UNIVERSITY OF BRITISH COLUMBIA

January 2019 - December 2022

- Enhancing the characterization of forest structure and resources for forest inventory and monitoring using airborne and spaceborne single photon lidar

### MSc in Environmental Sciences and Engineering

Lausanne, Switzerland

ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE

September 2015 - July 2017

- Master thesis: Influence of mountain shading on the spatial interpolation of direct shortwave radiation for snowmelt modeling

### BSc in Environmental Sciences and Engineering

Lausanne, Switzerland

ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE

September 2012 - July 2015

## Experience

### Freelance Remote Sensing Consultant

Vancouver, Canada

SELF-EMPLOYED

January 2023 - June 2023

- Development of interactive dashboards (Shiny Apps)
- Development of land cover and land use mapping products
- Advising on remote sensing data products

### Teaching Assistant

Vancouver, Canada

FACULTY OF FOREST RESOURCES MANAGEMENT (UBC)

January 2019 - May 2022

- Developing course content (lectures and assignments) and guiding students to learn about remote sensing concepts and develop research proposals
  - CONS 127 - Observing the Earth from Space
  - FRST 443 - Remote Sensing for Ecosystem Management
  - GEM 520 - Remote Sensing for Ecosystem Management (for the Master of Geomatics for Environmental Management program)
  - FCOR 599 - Project Proposal Development and Proof of Concept (for the Master of Geomatics for Environmental Management program)

### Co-instructor

Vancouver, Canada

FACULTY OF FOREST RESOURCES MANAGEMENT (UBC)

September 2021 - December 2021

- Responsible for teaching spatial data processing with R to students in the Master of Geomatics for Environmental Management program
  - GEM 520 - Remote Sensing for Ecosystem Management (Co-instructed with Nicholas Coops)

### Engineering internship

Francin, France

HYDRETUDES

July 2015 - September 2015

- Hydraulic studies and river management planning; Contribution to various studies related to flood protection in alpine environments

## Skills

#### Data Science

R (including spatial data processing); QGIS/ArcGIS Pro; Lidar processing (LASTools, lidR); R Shiny Apps; Python

#### Writing and Communication

Peer-reviewed publications; Teaching; Conferences

#### Languages

English (Full proficiency); French (Native); Spanish (Intermediate)

## Awards

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### National Best Ph.D. Thesis - Issued by the Canadian Remote Sensing Society

Vancouver, Canada

2023

- Every year, the Canadian Remote Sensing Society issue a Student Award for the best thesis at the Ph.D. level.

### MGEM GTA Award

Vancouver, Canada

2022

- The MGEM GTA Award recognizes outstanding contributions by graduate teaching assistants (GTA) from the Master of Geomatics for Environmental Management (MGEM) program. Each year one GTA who has demonstrated exceptional teaching excellence is selected for the award.

### MFSA Prize for Spatial Analysis

Lausanne, Switzerland

2017

- Rewards a student whose Master project is characterized by an innovating integration of an aspect of spatial analysis

### Best Master Project in Environmental Sciences and Engineering – SIA Vaud

Lausanne, Switzerland

2017

- Rewards each year the best Master thesis that stands out by its excellence

## Peer-reviewed publications

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1. Goodbody, T. R. H., Queinnec, M., White, J. C., Hudak, A. T., Valbuena, R., Prieur, J.-F., Coops, N. C., Auty, D., Tompalski, P., McCartney, G., Leboeuf, A., & Sinclair, I. (2023). sgsR: A structurally guided sampling toolbox for lidar-based forest inventories. *Forestry: An International Journal Of Forest Research*.
2. Queinnec, M., Coops, N. C., White, J. C., Griess, V. C., Schwartz, N. B., & McCartney, G. (2022). Mapping dominant boreal tree species groups by combining area-based and individual tree crown LiDAR metrics with sentinel-2 data. *Canadian Journal of Remote Sensing*. <https://doi.org/10.1080/07038992.2022.2130742>
3. Irwin, L., Coops, N. C., Queinnec, M., McCartney, G., & White, J. C. (2021). Single photon lidar signal attenuation under boreal forest conditions. *Remote Sensing Letters*, 12, 1049–1060. <https://doi.org/10.1080/2150704X.2021.1962575>
4. Queinnec, M., White, J. C., & Coops, N. C. (2021). Comparing airborne and spaceborne photon-counting LiDAR canopy structural estimates across different boreal forest types. *Remote Sensing of Environment*, 262, 112510. <https://doi.org/10.1016/J.RSE.2021.112510>
5. Coops, N. C., Tompalski, P., Goodbody, T. R. H., Queinnec, M., Luther, J. E., Bolton, D. K., White, J. C., Wulder, M. A., Lier, O. R. van, & Hermosilla, T. (2021). Modelling lidar-derived estimates of forest attributes over space and time: A review of approaches and future trends. *Remote Sensing of Environment*, 260, 112477. <https://doi.org/10.1016/J.RSE.2021.112477>
6. Queinnec, M., Tompalski, P., Bolton, D. K., & Coops, N. C. (2021). FOSTER—an r package for forest structure extrapolation. *PLOS ONE*, 16, e0244846. <https://doi.org/10.1371/JOURNAL.PONE.0244846>
7. Queinnec, M., Coops, N. C., White, J. C., McCartney, G., & Sinclair, I. (2021). Developing a forest inventory approach using airborne single photon lidar data: From ground plot selection to forest attribute prediction. *Forestry: An International Journal of Forest Research*. <https://doi.org/10.1093/forestry/cpab051>
8. Bolton, D. K., Tompalski, P., Coops, N. C., White, J. C., Wulder, M. A., Hermosilla, T., Queinnec, M., Luther, J. E., Lier, O. R. V., Fournier, R. A., Woods, M. E., Treitz, P. M., Ewijk, K. Y. V., Graham, G., & Quist, L. (2020). Optimizing landsat time series length for regional mapping of lidar-derived forest structure. *Remote Sensing of Environment*, 239, 111645. <https://doi.org/10.1016/j.rse.2020.111645>

## Conferences and workshops

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### Forestry Futures Trust Ontario | Knowledge Transfer and Tool Development Webinar Series

Online workshop

SAMPLING AND GENERATION OF ENHANCED FOREST INVENTORY ATTRIBUTES FROM SINGLE PHOTON LIDAR

March 2021

### AWARE Annual General Meeting

Toronto, Canada

OPTIMIZING LANDSAT TIME SERIES LENGTH FOR REGIONAL MAPPING OF LIDAR-DERIVED FOREST STRUCTURE

February 2020

### AWARE Annual General Meeting

Toronto, Canada

INTRODUCTION TO THE FOSTER R PACKAGE

February 2020

## **Canadian Institute of Forestry | E-Lecture series**

NEW LIDAR TECHNOLOGIES ON THE HORIZON – SPL AND MULTI-SPECTRAL LIDAR

### **Silvilaser**

INFLUENCE OF VEGETATION STRUCTURE ON THE CANOPY PENETRATION OF SINGLE PHOTON LIDAR - ORAL  
PRESENTATION

*Online workshop*

*October 2019*

*Foz de Iguazu, Brazil*

*October 2019*