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Touching lives through innovation



The department of Geography, Geoinformatics and Meteorology at the University of Pretoria is advertising for the following position:

TWO-YEAR M.Sc SCHOLARSHIP 2021-2 IN REMOTE SENSING OF FORESTED AND OTHER WETLAND SPECIES AND STRUCTURE (R90 000 inclusive of VAT per annum)

The department of Geography, Geoinformatics and Meteorology at the University of Pretoria is collaborating with the CSIR's Earth Observation Research Group, who has secured funding from the Water Research Commission (WRC) for a project titled: 'Quantifying the extent and rate of changes in wetland types of the Maputaland Coastal Plain with remote sensing' that will run between 2021–2024.

The project will fund a 2-year M.Sc scholarship for 2021-2022 in the remote sensing of forested and other wetland species and structure, under supervision of Dr Heidi van Deventer (CSIR), Dr Philemon Tsele (UP) and Dr Laven Naidoo (CSIR).

The project aims to assess the capabilities of space-borne remote sensing sensors to detect and monitor forested and other wetland ecosystem types on the Maputaland Coastal Plain (MCP) of South Africa. Owing to the scale of the impacts across the landscape and the limitations in accessing parts of the MCP, remote sensing can play a key role in quantifying and determining the extent and rate of change, particularly the degradation and transformation as a result of anthropogenic impacts, in wetlands and their catchments of the MCP. Furthermore, the following objectives form part of the study:

- i. Evaluation of the possible wetland classes that could be in (optical) change detection for the MCP,
- ii. Assessment of the capabilities of radar in monitoring changes in forest structure, and
- iii. Quantifying the areal extent, rate and types of change observed for wetlands on the MCP.

Minimum requirements:

- BSc (Honours) degree (average pass > 65%) in Geospatial sciences or closely related discipline with an appropriate qualification that includes Remote Sensing (optical and radar), Geographical Information Systems (GIS) and Spatial Statistics
- Experience in using a wide range of relevant software such as ENVI, ERDAS, R and GEE or Sentinel Hub (licensed version)
- Experience in working with a wide range of satellite images from space-borne sensors and processing steps
- Experience in GIS and Remote Sensing data analysis and techniques (e.g. spatial analysis, machine learning and validation statistics)
- Driver's license Code B

Duties:

- Undertake an M.Sc research project on the remote sensing of forested and other wetland species for the purpose of monitoring these over time.

- Undertake extensive in-field validation.
- Support the wider project of the remote sensing of swamp forest and wetland mapping on the Maputaland Coastal Plain (e.g. fieldwork, data collation, analyses, literature review and reporting).

Place of work: Pretoria, South Africa

Form of employment: Two-year, fulltime scholarship (2021-2022)

Start date: 1 April 2021

Applications close: Monday 22 March 2021.

In applying for this post, please attach and send the following to philemon.tsele@up.ac.za:

- A comprehensive CV,
- Certified copies of qualifications,
- Names, e-mail addresses and telephone details of two referees whom we have permission to contact, and
- One-page motivation letter.

Contact person:

Dr. Philemon Tsele (PhD)

email: philemon.tsele@up.ac.za Tel: +27 12 420 4939