

POSTGRADUATE SUPERVISION (Updated 25 January 2024)

Current students				
Name of Student	Degree	Topic	Supervisor(s)	Project Completed (Yes/ No) & Date
Madodomzi Mafanya	PhD Geoinformatics	Synergy of GIS and remote sensing methods for monitoring the impact of invasive alien plants and assessment of the efficacy of control interventions at a national level	Dr. Philemon Tsele; Prof. Abel Ramoelo; Dr Tsungai Zengeya (SANBI);	<i>Current student</i>
Mcebisi Qabaqaba	PhD Environmental Management	Investigating methods for large scale mapping of woody cover, changes and uncertainties using optical and radar imagery. Requirement	Dr. Philemon Tsele; Dr. Laven Naidoo (CSIR); Prof. Moses Cho (CSIR); Prof. Abel Ramoelo	<i>Submitted for examination</i>
Reuben Sebego	PhD Geography	Spatial analysis of factors affecting the distribution of <i>Colophospermum</i> Mopane in eastern Botswana	Dr. Philemon Tsele; Prof. Abel Ramoelo	<i>Current student</i>
Agaton Mufubi	PhD Environmental Management	Harnessing South Africa's Ocean Economy - Coastal, Marine Fishery Resources, and Marine Tourism: A Natural Capital Accounting Approach	Dr. Philemon Tsele; Dr. Ahmed Kalumba (UFH)	<i>Current student</i>
Gladness Khoza	PhD Geoinformatics	Modelling the distribution of Nitrogen, Phosphorus and forage biomass in savannah grasslands under domestic and wildlife grazing regimes.	Dr. George Chirima, Prof. Abel Ramoelo, Dr. Philemon Tsele	<i>Current student</i>
Theo Tsuaneng	M.Sc Geoinformatics	Mapping Tree Canopy Cover and Aboveground Biomass in the Kavango Region Using Multi-scale Remote Sensing	Prof. Abel Ramoelo; Dr. Philemon Tsele;	<i>Current student</i>
Wongalethu Silwana	M.Sc Geoinformatics	Using geospatial technology to assess WEF nexus and linkages with climate change adaption activities and options in Mpumalanga	Prof. Abel Ramoelo; Dr. Philemon Tsele; Dr. Oscar Mokotedi (CSIR); Dr. Brian Mantlana (CSIR)	<i>Submitted for examination</i>
Philani Apleni	M.Sc Geoinformatics	Quantifying the extent and rate of changes in wetland types of Maputaland Coastal Plain with remote sensing	Dr. Heidi van Deventer (CSIR), Dr. Laven Naidoo (CSIR), Dr. Philemon Tsele	<i>Submitted for examination</i>
Afika Singano	M.Sc Geoinformatics	Inversion of radiative transfer model (PROSAIL) in estimating leaf chlorophyll and nitrogen as indicators of rangeland quality	Prof. Abel Ramoelo; Dr. Philemon Tsele	<i>Current student</i>

Thabang Monate	M.Sc Geoinformatics	Time series analysis and modelling of land use and land cover changes in the Vaal Triangle using multi-temporal satellite imagery and machine learning techniques	Dr. Philemon Tsele; Prof. Abel Ramoelo	<i>Current student</i>
Shaun Muirhead	M.Sc Geoinformatics	Chlorophyll estimation as an indicator of crop health on maize using drone multispectral imagery and machine learning techniques: case study of Winterton, South Africa	Dr. George Chirima; Dr. Philemon Tsele; Dr. Adolph Nyamugama (ARC)	<i>Current student</i>
Carli Kriek	M.Sc Geoinformatics	Using multitemporal UAV imagery and machine learning for mapping soybean diseases: case study of Heidelberg, South Africa	Dr. George Chirima; Dr. Philemon Tsele; Dr. Adolph Nyamugama (ARC)	<i>Current student</i>
Lutendo Maginya	M.Sc Geoinformatics	Multi-decadal analysis of fractional vegetation cover using Sentinel-2 and Landsat data in Marakele National Park	Dr. Philemon Tsele; Prof. Abel Ramoelo	<i>Current student</i>

Former students				
Name of Student	Degree	Title of dissertation	Supervisor(s)	Project Completed (Yes/ No) & Date
Madodomzi Mafanya	M.Sc (Geoinformatics)	Prototyping a semi-automated object based image classification system for mapping and timely monitoring of invasive alien plant species in South Africa: A <i>Harrisia pomanensis</i> case study	Dr. Philemon Tsele; Dr. Joel Botai; Mr. Phetole Manyama	Yes (2017) – <i>Cum Laude</i>
Colette de Villiers	M.Sc (Geoinformatics)	Mapping the invasive alien plant species, <i>Prosopis glandulosa</i> using remote sensing techniques: A case study in Prieska, Northern Cape, South Africa	Dr. Cilence Munghemzulu (ARC); Dr. George Chirima (ARC); Dr. Philemon Tsele	<i>Yes (2020) Cum Laude</i>
Modibe Rachamose	M.Sc Environmental Management	The effect of disturbances on woody plant encroachment at Loskop Farm, South Africa	Prof. Abel Ramoelo, Dr. Philemon Tsele, Dr. Julius Tjelele (ARC),	<i>Yes (2022)</i>
Ngcoliso Nasiphi	M.Sc Geoinformatics	Application of Remote Sensing in estimating grass quality (leaf nitrogen concentration) using Sentinel-2 data sets: The case study of Kruger National Park area	Prof. Abel Ramoelo; Dr. Philemon Tsele	<i>Yes (2023)</i>

Charity Tseka	M.Sc Geoinformatics	Remote sensing of grass biophysical parameters	Prof. Abel Ramoelo; Dr. Philemon Tsele	<i>Yes (2023)</i>
Sisipho Ngebe	M.Sc Geoinformatics	Assessment of seasonal variations of teal carbon in Chrissiesmeer wetlands of the Grassland Biome, South Africa	Dr. Laven Naidoo (CSIR), Dr. Philemon Tsele, Dr. Heidi van Deventer (CSIR),	<i>Yes (2023) – Cum Laude</i>
Trishanta Srikiissoon, and Godwin Sichulu	MIT (Big Data Science)	Remote Sensing-Based Techniques for Tree Detection in Northern Limpopo	Prof. Abel Ramoelo, Dr. Philemon Tsele, Dr Khangwelo Musetsho	<i>Yes (2023)</i>
Joshua Da Silva, and Neacail	MIT (Big Data Science)	Detection and counting of four tree species, including the iconic Boabab tree using remote sensing and machine learning techniques, in the far-northern part of Limpopo.	Prof. Abel Ramoelo, Dr. Philemon Tsele, Dr Khangwelo Musetsho	<i>Yes (2023)</i>
Tsepang Polaki, and MH van Staden	MIT (Big Data Science)	Identifying and counting commercial solar installations in South Africa	Prof. Abel Ramoelo, Dr. Philemon Tsele, Prof. Vukosi Marivate	<i>Yes (2022)</i>
Simone Kriel	Bsc (Hons) Geography & Environmental Science	Assessing the temporal variation of plant phenology in response to environmental variability using field and remote sensing data in the savanna biome, South Africa	Prof. Abel Ramoelo; Dr. Philemon Tsele; Prof. Mark Robertson; Prof. Emma Archer	<i>Yes (2023)</i>
Gabrielle Grobler	Bsc (Hons) Geography & Environmental Science	Establishing a baseline for land use and land cover change in a strategic water management area within the Garden Route Biosphere Reserve	Dr. Kaera Coetzer; Dr. Philemon Tsele	<i>Yes (2023)</i>
Anam Mnengela	Bsc (Hons) Geography & Environmental Science	Burned area estimation using Sentinel-2 data and assessing the post-fire effects of the Knysna fires on surrounding landscape	Dr. Philemon Tsele; Prof. Abel Ramoelo	<i>Yes (2023)</i>
Mokgaetsi Kgoele	Bsc (Hons) Geography & Environmental Science	Modelling historical, current and future land use and land cover change as a driver of biodiversity loss in the Kruger to Canyons biosphere reserve communal areas	Prof. Abel Ramoelo; Dr. Philemon Tsele; Prof. Emma Archer	<i>Yes (2023)</i>
Michael Dlamini	Bsc (Hons) Geoinformatics	Development of Soybean chlorophyll and LAI estimation models for multiple growth stages using drone multispectral imagery and regression methods	Dr. Philemon Tsele; Prof. Abel Ramoelo; Mr. Mcebisi Qabaqaba	<i>Yes (2023)</i>
Theo Tsuaneng	Bsc (Hons) Geoinformatics	Using Random Forest to classify Sentinel-2 and PlanetScope Optical Imagery to differentiate Cocoa Trees	Dr. Philemon Tsele; Prof. Gregory Breetzke; Prof. Abel Ramoelo	<i>Yes (2022)</i>

		from Surrounding Landcover		
Sedgeley Penniken	Bsc (Hons) Geoinformatics	Wildfire Damage Assessment Over the Lottering plantation Using Sentinel-2 Imagery and Inter-comparison of Burn Severity Indices	Dr. Philemon Tsele; Mr. Madodomzi Mafanya (UNISA)	<i>Yes (2022)</i>
Afika Singano	Bsc (Hons) Geoinformatics	Assessing the relationship between long-term vegetation and temperature changes using NDVI and meteorological data in the Waterberg region	Dr. Philemon Tsele; Prof. Abel Ramoelo	<i>Yes (2021)</i>
Shaun Muirhead	Bsc (Hons) Geoinformatics	Testing and comparing Sentinel-2 and RapidEye satellite data for discriminating maize and wheat crops using machine learning image classifiers	Dr. George Chirima (ARC); Dr. Philemon Tsele; Dr. Adolph Nyamugama (ARC)	<i>Yes (2021) – Cum Laude</i>
Carli Kriek	Bsc (Hons) Geoinformatics	Evaluating red-edge based vegetation indices using Sentinel-2 and World View-2 satellite data for discriminating maize and soybeans	Dr. George Chirima (ARC); Dr. Philemon Tsele; Dr. Adolph Nyamugama (ARC)	<i>Yes (2021) – Cum Laude</i>
Itumeleng Ngwatwane	Bsc (Hons) Geoinformatics	Assessing the impact of converting natural vegetation to impervious surface areas in Tshwane using Landsat data	Prof. Abel Ramoelo; Dr. Philemon Tsele;	<i>Yes (2021)</i>
Varaidzo Sabeta	Bsc (Hons) Geoinformatics	Analysis of water quality along the peri-urban informal settlements of Mamelodi	Dr. Philemon Tsele, Dr. Oupa Malahlela (SANSA), Mrs. Nale Mudau (SANSA)	<i>Yes (2019)</i>
Nkosinathi Sibanyoni	Bsc (Hons) Geoinformatics	Land Use and Land Cover Change around Protected Areas	Dr. Abel Ramoelo (SANParks), Dr. Philemon Tsele,	<i>Yes (2019)</i>
Jasper Stone	Bsc (Hons) Geoinformatics	Statistical comparison of airborne Lidar based biomass estimation allometric equations	Dr. Philemon Tsele and Mr. Madodomzi Mafanya (UNISA)	<i>Yes (2019)</i>
Keneuoe Maliehe	Bsc (Hons) Geoinformatics	Classification of LIDAR and multispectral data to map decline stages of the citrus sinensis plant in south africa	<i>Mr. Philemon Tsele; Mr. Madodomzi Mfanyana (CADMapping)</i>	<i>Yes (2017)</i>
Faizel Khan	Bsc (Hons) Geoinformatics	Image radiometric calibration and classification of UAV derived imagery for accurate mapping of the <i>Harrisia pomanensis</i>	<i>Mr. Philemon Tsele; Mr. Madodomzi Mfanyana (CADMapping)</i>	<i>Yes (2017)</i>
Bongiwe Tshabalala	Bsc (Hons) Geoinformatics	Using Landsat 8 satellite imagery to monitor turbidity, water temperature	<i>Mr. Cilence Munghemzulu; Mr. Philemon</i>	<i>Yes (2017)</i>

		and pH at the Hartbeespoort dam	<i>Tsele; Dr. George Chirima (ARC);</i>	
<i>Kathleen Godfrey</i>	Bsc (Hons) <i>Geoinformatics</i>	Investigating the use of remotely sensed data from UAVs for the mapping of green peas and monitoring of temporal effects of fertilizer application	<i>Mr. Philemon Tsele; Mr. Thabang Monate (CADMapping)</i>	<i>Yes (2016)</i>
<i>Phillip Mogaleamalla</i>	Bsc (Hons) <i>Geoinformatics</i>	Validating structure from motion mine stockpile-volume estimates using differential GPS topographic points	<i>Mr. Philemon Tsele; Mr. Madodomzi Mfanyana (CADMapping)</i>	<i>Yes (2016)</i>
<i>Nadine Du Preez</i>	Bsc (Hons) <i>Geoinformatics</i>	Development of a web-based GIS application for accessing, analysing and disseminating agricultural geospatial information	<i>Mr. Philemon Tsele; Mr. Thabang Monate (CADMapping)</i>	<i>Yes (2016)</i>
<i>Janique Dustine Savy</i>	Bsc (Hons) <i>Geoinformatics</i>	Monitoring the Chlorophyll-a content along coastal regions of South Africa with the use of Remote Sensing	<i>Mr. Cilence Munghemezulu; Dr. George Chirima (ARC); Mr. Philemon Tsele</i>	<i>Yes (2016)</i>
<i>Tebogo Mokwena</i>	Bsc (Hons) <i>Geoinformatics</i>	Analysis of temperature-induced pointing variations of the Hartbeeshoek Radio Astronomy Observatory (HartRAO) Satellite Laser Ranging telescope	<i>Prof. Ludwig Combrinck (HartRAO); Mr. Philemon Tsela</i>	<i>No (2015)</i>
<i>Michelle Beste</i>	Bsc (Hons) <i>Geoinformatics</i>	Analysis of Vegetation interfering with Eskom's Transmission Lines based on multi-sensor remotely sensed imagery	<i>Mr Philemon Tsela; Dr. Renaud Mathieu (CSIR)</i>	<i>Yes (2014) – Cum Laude</i>
<i>Bartho Vogel</i>	Bsc (Hons) <i>Geoinformatics</i>	Crop yield forecasting based on multi-temporal Landsat imagery on a selected farm portion in Newcastle, South Africa	<i>Mr Philemon Tsela</i>	<i>Yes (2014)</i>
<i>Ramadhani Khatibu</i>	Bsc (Hons) <i>Geoinformatics</i>	Assessing inventories of Carbon emissions from biomass burning over southern Africa	<i>Mr Philemon Tsela</i>	<i>Yes (2013)</i>
<i>Mlondolozzi Ncapayi</i>	Bsc (Hons) <i>Geoinformatics</i>	Prototyping an environmental monitoring information system using GIS	<i>Prof. Serena Coetzee; Mr. Philemon Tsela</i>	<i>Yes (2011)</i>
<i>Savhasa Tshisikhawe</i>	Bsc (Hons) <i>Geography</i>	Multicriteria analysis using GIS for school site selection	<i>Mr. Philemon Tsela</i>	<i>Yes (2011)</i>