

Curriculum Vitae



Personal Information

Name	Gerhardt Botha
Address	96 Hoffman Street, Potchefstroom, 2520, South Africa
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Email	gerhardtbotha5@gmail.com
Nationality	South African
Date of birth	29.09.1998
Gender	Male

Work Experience


Dates	01.01.2021 - present
Position held	Research Intern
Name and address of employer	Climatology Research Group, North-West University, Potchefstroom
Main activities and responsibilities	Project management, software development, data analysis, technical report writing, lecturing and training, air quality monitoring and research, weather radar and meteorological research, geospatial and remote sensing analysis
Dates	01.11.2019 – 14.12.2020
Position held	Research Assistant
Name and address of employer	Climatology Research Group, North-West University, Potchefstroom
Main activities and responsibilities	Research assistance, data collection and analysis, software development, geospatial and remote sensing research and analysis


Education

Dates	2021 - present
Name of organisation and location	North-West University, Potchefstroom
Title of qualification	Masters of Science in Environmental Science
Principal subjects	Air quality, remote sensing, weather radar
Dates	2020
Name of organisation and location	North-West University, Potchefstroom
Title of qualification	Bachelor of Science Honours in Environmental Sciences with Geography and Environmental Management (Cum Laude)

Principal subjects	Earth observation, air quality, disaster risk reduction and climate change adaptation, applied GIS
Dates	2016 - 2019
Name of organisation and location	North-West University, Potchefstroom
Title of qualification	Bachelor of Arts in Psychology, Geography and Environmental Management
Principal subjects	Geography, psychology
Dates	2012 - 2016
Name of organisation and location	Highschool Garsfontein, Pretoria
Title of qualification	High School Diploma
Awards	
Dates	2020
Name of organisation	Golden Key International Honour Society
Award	Golden Key Academic Achievement Award
Dates	2020
Name of organisation	The South African Society for Atmospheric Sciences
Award	1 st Place for Best Student Presentation
Computer Skills	
Analytics	Python, Excel
Programming	Python
GIS	ArcGIS, QGIS, Google Earth Engine
Web development	Full Stack Development with Flask, HTML, CSS
Scripting	Shell scripting (BASH, TCSH)
Operating Systems	Windows and Linux operating systems
Google Workspace	Proficient in all google workspace productivity tools (Colab, Docs, Spreadsheets, Slides, Forms, etc.)
Virtual conferencing	Experienced in online workspace and classroom tools (Microsoft Teams, Zoom, Google Meet, WhatsApp, Slack)
TITAN	Configurations and administration of TITAN software for weather radar statistics and analytics
Personal Skills	
Social skills	Driven, punctual, friendly, conscientious, patient, respectful
Organizational skills	Committed, able to work in a multidisciplinary team under high pressure, passion for continuous learning and research
Technical skills	Proficient in various technologies with the ability to learn, and teach new technologies with ease
Driver license	Code B
Field Campaigns	
Dates	2021
Project	World-Bank Source Apportionment for the Greater Johannesburg Area
Description	Responsible for the analysis and reporting on the continuous air quality monitoring data and GIS map generation

Responsibilities	Data analysis, report writing, cartography
Dates	09.08.2021 - 30.09.2021
Project	The UAE Research Programme for Rain Enhancement Science (UAERP)
Description	Provided technical support for the administration and management of weather radar analysis on the cloud server. Weather forecasting for directing field team to regions of interest and report writing
Responsibilities	Weather forecasting, software development, technical report writing
Dates	21.07.2021 - 01.09.2021
Project	Nova Institute Smash Block Air Quality Baseline Assessment
Description	Led the low-cost air quality monitoring and source apportionment campaign
Responsibilities	Project management, data analysis
Dates	01.09.2020 - 31.08.2021
Project	Nova Institute and Anglo American Platinum Air Quality Offsets
Description	Led the development and deployment of low-cost air quality monitoring stations in Northam and Rustenburg, South Africa
Responsibilities	Project management, data management and analysis
Dates	01.02.2021 - present
Project	NWU Medical Research Council Vaal Low-Cost Sensor Study
Description	Responsible for the deployment and maintenance of various instruments, data analysis and report writing
Responsibilities	Data analysis, presentation
Dates	10.06.2021 - 01.07.2021
Project	Gobabeb Namib Research Institute: Fog detection in the Namib desert
Description	Deployment of soil moisture and leaf wetness sensors in the Namib desert and gravel plains
Responsibilities	Instrument deployment, data analysis
Dates	14.05.2021 - 17.05.2021
Project	Manhica Health Research Centre (CISM) meteorological station
Description	Supply and install of a meteorological station for the CISM in Mozambique
Responsibilities	Instrument deployment
Dates	06.10.2021 - 08.10.2021
Project	National Association for Clean Air (NACA) Annual conference 2021
Description	Provided technical support for the NACA 2021 conference
Responsibilities	IT support
Dates	16.11.2020 - 20.11.2020
Project	National Association for Clean Air (NACA) Annual conference 2020
Description	Part of the technical team for the NACA 2020 conference
Responsibilities	IT support, virtual conference organisation

Dates	2021
Project	Aerosol Robotic Network (AERONET) Cimel Sunphotometer NWU network
Description	Responsible for the management of the NWU sunphotometer network in Uptington, Skukuza and Carletonville
Responsibilities	Project management
Lecturing	
	Part-time assistant lecturer for undergraduate Climatology and postgraduate Earth Observation modules
Courses and Workshops	
Dates	2021
Name of organisation	University of Michigan by Coursera
Title of course	Programming for Everybody (Getting started with Python)
Certificate	https://coursera.org/share/324a14d82448d5a30c73c04510b76787
Dates	2021
Name of organisation	Coursera
Title of course	Python for Data Analysis: Pandas & NumPy
Certificate	https://coursera.org/share/24c8486bb6964ff448f0f30661c32674
Dates	2021
Name of organisation	Coursera
Title of course	Basic Statistics in Python (ANOVA)
Certificate	https://coursera.org/share/2c497003d20e9693494352ce9d7f97e3
Dates	2021
Name of organisation	Centre for High-Performance Computing (CHPC)
Title of course	CHPC Linux and Python Training School for the North-West University's Faculty of Natural Sciences
Dates	2021
Name of organisation	AS Driving
Title of course	Defensive driver training
Certificate	 Defensive_Driving.pdf
Dates	2020
Name of organisation	ESRI Web Courses
Title of course	Basics of map projections; Basics of geographic coordinate systems; Getting started with GIS; Deriving rasters for terrain analysis using ArcGIS; Using raster data for site selection; Introduction to surface modelling using ArcGIS; Building models for GIS analysis using ArcGIS; Preparing for network analysis; Getting started with ArcGIS Pro; Display data in ArcGIS Pro; Getting started with site scan for ArcGIS; Creating optimised routes using ArcGIS Pro; Creating 3D data using ArcGIS; Getting started with spatial analysis; Introduction to suitability modelling; 3D Visualisation techniques using ArcGIS; Distance analysis using ArcGIS; 3D Analysis of surfaces and features using ArcGIS; Displaying raster data in ArcGIS; Working with Geodatabase domains and subtypes in ArcGIS; Getting started with Geodatabase topology; Getting started with the Geodatabase; Map design

		fundamentals; Planning a cartography project; Working with coordinate systems in ArcGIS
	Certificate	ESRI Certificates 2020
Papers Presented		
	Dates	2021
	Name of conference	South African Society for Atmospheric Science 2021 online conference
	Title of paper	Spatio-temporal characterisation of particulate matter plumes using weather radar observations
	Dates	2021
	Name of conference	National Association for Clean Air (NACA) 3MT
	Title of paper	Weather radar observations of particulate plumes
	Dates	2020
	Name of conference	South African Society for Atmospheric Science 2020 conference
	Title of paper	Improving radar-derived rainfall estimates of extreme events on the South African Highveld
Community Engagement		
	Date	2021
	Name of project	South African Agency for Science and Technology Advancement (SAASTA) National Science Week air quality documentary titled “Science addressing air quality in South Africa”
	Responsibilities	Contributed to SAASTA National Science Week by talking about low-cost sensors for air quality management in the documentary
	More info	 Science addressing air quality in South Africa
Links		
	LinkedIn	Gerhardt Botha - Environmental Science Intern - Climatology Research Group LinkedIn
References		
		<p>Prof Stuart Piketh Director, School for Geo- and Spatial Sciences, North-West University, Potchefstroom +27 18 299 1582 Stuart.piketh@nwu.ac.za</p> <p>Prof Roelof Burger Associate Professor, North-West University, Potchefstroom +27 82 563 9776 Roelof.burger@nwu.ac.za</p> <p>Mr Henno Havenga Lecturer, North-West University, Potchefstroom +27 74 376 2844 hhavenga92@gmail.com</p>