

# Ntuthuko Maphalala

Pietermaritzburg, KwaZulu-Natal

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[LinkedIn](#) | [GitHub](#) | [Portfolio](#)

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## Professional Summary

BSc Computer Science & IT graduate with practical experience in software development, cloud solutions, data analytics, and AI tools. Skilled in Python, SQL, Power Platform, and Azure, with a proven record of building AI assistants, automation workflows, and full-stack applications. Recognized for adaptability, strong problem-solving, and delivering data-driven business solutions.

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## Core Competencies

- Data & Development: Python, SQL, R, PowerApps, Power Automate, Jupyter Notebook
  - Data Visualization: Power BI, Tableau, Excel Dashboards, ggplot2
  - Programming Languages: Python, Java, PHP, R, C++, C#, JavaScript, HTML, CSS
  - Cloud & Infrastructure: Microsoft Azure, Azure DevOps, CI/CD, Virtualization
  - Frameworks & Tools: React.js, Node.js, Express.js, GitHub, VS Code, SharePoint, Cursor AI
  - Networking: IPv4 Addressing, DHCP, Wireless Networks, Routing Protocols
  - Operating Systems: Windows, macOS, Ubuntu
  - Soft Skills: Problem-Solving, Team Collaboration, Communication, Attention to Detail
  - Documentation & AI Integration: Multi-File Chat with Ollama, Gemma3 & Semantic Search (Python, Streamlit, Embeddings, Retrieval-Augmented Generation)
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## Education & Training

### Bachelor of Science in Computer Science & IT

*University of KwaZulu-Natal, Pietermaritzburg*

Graduated: May 2023

- Focus Areas: Software Development, Networking, Databases, Cloud Technologies, Data Analysis

## Microsoft PowerUp Program

*Microsoft – Remote / Virtual*

Aug 2025 – Oct 2025

- Introduction to Power Platform
  - Dataverse (data modeling & model-driven apps)
  - Power Apps (Canvas Apps, low-code development)
  - Power Automate (workflow automation)
  - Power BI (business intelligence & data visualization)
  - PowerUp Challenge: Integrated Power Platform project
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## Professional Experience

Data & IT Development Intern

*Institute for Commercial Forestry Research (ICFR), Pietermaritzburg*

Aug 2024 – Present

- Built a local AI assistant using LLMs for querying internal PDFs securely.
- Automated reporting workflows in Python & R, cutting report time by 40%.
- Developed Home Assistant IoT integrations for Sunsynk inverters & sensors.
- Cleaned and analyzed forestry data, improving data quality & insights.

Business & Data Analyst – BMW YES Programme

*Afrika Tikkun Services, Pietermaritzburg*

Mar 2024 – Jul 2024

- Managed & cleaned 900+ student records in SA-SAMS, reducing errors by 10%.
- Designed SQL queries for academic performance tracking & reporting.

Azure Cloud Architect Apprentice

*Deviare (Microsoft Interprovincial Apprenticeship), Remote*

Sep 2023 – Mar 2024

- Designed and deployed scalable Azure cloud applications.
  - Implemented CI/CD pipelines, reducing deployment time by 50%.
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## Projects & Innovations

- AI PDF Chat Assistant: Offline LLM (Ollama + Gemma3) for document queries.
- Microsoft Copilot Coaching Bot – AI assistant built with Azure & OpenAI for guided coaching. [🔗 Live Demo](#)
- FNB App Academy Projects – Full-stack apps using React, Node.js, Express.js, and API integrations.
- Pong Game Website – Interactive and responsive browser-based Pong game. [🔗 Play](#)
- TechGuard IT Solutions Website – Professional IT services website. [🔗 Visit](#)
- PowerApps Lifestyle Survey App – Automated data collection and workflows via Power Automate + SharePoint.

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## Certifications

- Networking Basics – Cisco Networking Academy - 2025
- Full Stack Development – FNB App Academy - 2025
- Learning REST APIs – LinkedIn Learning - 2025
- Data Analytics Foundations – LinkedIn Learning - 2025
- Power BI Essential Training – LinkedIn Learning - 2025
- Introduction to Data Science – LinkedIn Learning - 2025
- Data Visualization with R – Cognitive Class - 2024
- Azure Cloud Architect – Deviare - 2023

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## Badges

- Microsoft Power Up Program – Pathfinder (Power Platform) - 2025
- Cisco Networking Basics: Mastered IP addressing, routing & protocols - 2025

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## References

Name	Company	Position	Cell phone number	Email
<b>Karin Nagel</b>	Institute for Commercial Forestry	Chief Executive Officer	0728371090	Karin.Nagel@icfr.ukzn.ac.za

<b>Nuveshen Naidoo</b>	Research (ICFR)			
	Institute for Commercial Forestry Research (ICFR)	Senior Scientist/Mentor	0763900137	Nuveshen.Naidoo@icfr.ukzn.ac.za