

# MMAPUTI MADIOPE

## BACK-END DEVELOPER



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### PROFILE

Software Engineer with strong foundations in Computer Science & Applied Mathematics, recognized among the top 20% - of South Africa's functional problem-solvers by SAYouth.mobi. Delivered two high-impact operational internal tools at Nedbank LTD, including **DIO Bot** (An AI-powered custom application that automated incident capturing, reducing manual workload and improving data accuracy) and the **Group Security SOP** (*document that streamlined onboarding and enhanced training quality for trainees*). Solely engineered the **Hybrid CVRPTWTC Allocation System** for BigSMS Pty Ltd (Australia) under the technical guidance of Senior engineer (IT whizz) Ross Spearritt. The system is a multi-phase optimisation engine built with Google OR-Tools, featuring CP-SAT job assignment, VRPTW routing (using Haversine and Google Maps API as distance method), cumulative work-based break constraints, multithreading, and a deterministic fallback scheduler. Skilled in backend engineering, constraint modelling, algorithmic optimisation, and building scalable operational systems. Through these innovations, I've translated complex needs into scalable, practical solutions, and I'm eager to contribute this mindset to a forward-focused team to further enhance my professional expertise.

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### WORK EXPERIENCE

#### YES-Youth Trainee

GFCFS (Group Financial Crimes, Forensics and Security)

01 July 2024 - 30 June 2025

- Captured and documented various incident types, including commercial and vandalism-related crimes, using CIIMS and Listener software, based on reports from the Nedcor JOC (Joint Operating Centre), Bidvest Protea Coin (BPC), and NedCase via NGRRL.
- Maintained and updated operational documentation such as the JOC Download 2024, Branch Sites Planner Master 2024, CCTV, ATM SRA-not-done and last-date-done-to-date and ATM replacements and new.
- Ensured data accuracy and consistency across all reporting tools and systems.
- Utilised Power BI to share stats reports with the team.
- Independently micromanaged and recorded daily activities using MS Excel, ensuring task accountability and progress tracking.

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## QUALIFICATIONS

### University of Limpopo

Bachelor of Mathematical Sciences

2020 - 2023

### Software Engineer Training

tma.Academy skills training

October 2025 - Present

### Ponelopele Oracle Secondary School

Matric

2019

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## SOFT SKILLS

- Critical and analytical thinking skills
- Communication skills
- Adaptability
- Teamwork
- Organisation and time management skills

## TECHNICAL SKILLS

- Programming technologies (Java, C#, ASP.NET Core, JavaScript, TS, Express.js, Node.js, and React.js )
  - MS SQL-Server (T-SQL, SP) & PostgreSQL server
  - Git, GitLab and GitHub
  - AI-Agent Development
  - AI technologies: Cursor, Copilot, BlackBox, ChatGPT, and Meta tools
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## PROJECTS

### Mends college student portal

Mends college

2023

- Web-based operational platform providing streamlined access to digital assets, including **DIO Bot**, an AI-powered application that automates incident capturing, reduces manual workload, and improves data accuracy.

**DIO System**

Nebank LTD

2024

- A web software solution built to deliver streamlined and efficient access to other developed digital assets including DIO Bot an AI-powered custom application - that automated incident capturing, reducing manual workload and improving data accuracy.

**Hybrid CVRPTWTC Allocation System**

BigSMS Pty Ltd

2025

- Solely developed multi-phase optimisation engine using **Google OR-Tools**, featuring CP-SAT job assignment, VRPTW routing, cumulative work-based break constraints, multithreading, and deterministic fallback scheduling ensuring there exist no job/work time window overlap.
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