

# Katlego Magabane

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## SUMMARY

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Computer Science and Applied Mathematics graduate with a strong foundation in software development, data analysis, and problem-solving. Experienced in building and maintaining applications through academic and practical projects, with hands-on exposure to Python, JavaScript, front-end development, and data-driven solutions. Comfortable working in collaborative, agile environments, learning new technologies quickly, and contributing to scalable, customer-focused systems.

## SKILLS

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<b>Programming</b>	Python, JavaScript, PHP, SQL, Java, C
<b>Web Development</b>	HTML, CSS, JavaScript, React, Tailwind CSS; frontend-focused application development
<b>Data &amp; Analysis</b>	Data preprocessing, exploratory analysis, model evaluation, quantitative reasoning
<b>Tools &amp; Practices</b>	Git/GitHub, debugging, basic testing concepts, version control, Overleaf
<b>Analytical</b>	Logical problem-solving, structured thinking, data interpretation
<b>Communication</b>	Technical tutoring, mentoring, presentations, report writing
<b>Languages</b>	English, Sesotho (Proficient); isiXhosa, isiZulu (Intermediate); French (Beginner)
<b>Currently Exploring</b>	Node.js, backend APIs, cloud computing fundamentals, CI/CD concepts

## PROJECTS

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<b>Honours Project – Machine Learning for Pest Detection in Maize</b>	2025
<ul style="list-style-type: none"><li>– Designed, trained, and evaluated convolutional neural network models (U-Net) for image classification using PyTorch and TensorFlow.</li><li>– Implemented data preprocessing pipelines and applied statistical analysis to assess model performance.</li><li>– Improved model accuracy through iterative experimentation, debugging, and evaluation.</li></ul>	
<b>Cultivate Web Application (Team Project)</b>	2024
<ul style="list-style-type: none"><li>– Developed frontend features using JavaScript and implemented responsive user interface designs.</li><li>– Applied security measures, including input sanitisation and password hashing.</li><li>– Collaborated in a team-based development environment using version control.</li></ul>	
<b>Tic-tac-toe App (Team Project)</b>	2022
<ul style="list-style-type: none"><li>– Implemented game logic and user interface components using Python.</li><li>– Focused on logical correctness, debugging, and reliability.</li></ul>	

## WORK EXPERIENCE

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<b>Science Tutor – Grahamstown Extra Lessons</b>	Mar 2025 – Nov 2025
<ul style="list-style-type: none"><li>– Provide academic support in Physical Sciences and Mathematics to high school students.</li><li>– Break down complex concepts into simple explanations, adapting strategies for different learners.</li></ul>	

<b>Mathematics Tutor – Rhodes University</b>	Mar 2025 – Nov 2025
<ul style="list-style-type: none"> <li>– Tutor first-year students in foundational and applied mathematics.</li> <li>– Handle administrative tasks, including marking and data entry.</li> </ul>	
<b>Box Office Operator – National Arts Festival</b>	Jul 2025
<ul style="list-style-type: none"> <li>– Sold tickets and processed payments accurately using a computerised system.</li> <li>– Balanced daily sales reports and resolved technical issues under pressure.</li> </ul>	
<b>Vacation Sub-Warden – Rhodes University</b>	Aug 2024
<ul style="list-style-type: none"> <li>– Managed guest check-in processes and coordinated housekeeping services.</li> <li>– Addressed service issues, developing organisational and problem-solving skills.</li> </ul>	

## EDUCATION

<b>B.Sc. Hons in Applied Mathematics</b>	2025
<ul style="list-style-type: none"> <li>– Rhodes University, Makhandla</li> <li>– Coursework: Machine Learning, Numerical Modelling, Image Processing</li> </ul>	
<b>B.Sc. in Applied Mathematics &amp; Computer Science</b>	2022–2024
<ul style="list-style-type: none"> <li>– Rhodes University, Makhandla</li> <li>– Coursework: Data Structures &amp; Algorithms, Mathematical Programming, Web Development &amp; Security</li> </ul>	
<b>National Senior Certificate</b>	2017–2021
<ul style="list-style-type: none"> <li>– Thaba Jabula Secondary School, Soweto</li> <li>– Distinction learner; Top 10 in Johannesburg North District</li> </ul>	

## LEADERSHIP & ACHIEVEMENTS

<b>Golden Key International Honour Society (Top 15% Academic Excellence)</b>	2022
<b>Mentor, Rhodes University</b>	2024
<b>Media Officer, Rhodes University Chamber Choir</b>	2022
<b>Top Academic Student, Graham House</b>	2022
<b>Drostdy Hall First-Year Academic Award</b>	2022
<b>Top 10 Learner, Johannesburg North District</b>	2021

## REFEREES

<b>Prof. Marcel Atemkeng</b>	<b>Jessica Lubbe</b>
<b>Rhodes University – Dept. of Mathematics</b>	<b>Grahamstown Extra Lessons</b>
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