

Tony Mogoa Ombaso

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Personal Profile

I aspire to be a leading research scientist and lecturer in computer science, making an impact in Africa through scientific research in Artificial Intelligence.

Education

University of Pretoria

BScHons Computer Science

Pretoria, South Africa

Feb 2025 - Present

- Coursework: Scientific Research; Artificial Intelligence I and II; Formal Aspects of Computing (Model Checking); Natural Language Processing; Image Processing; Computer Science Education

Strathmore University

BSc in Informatics and Computer Science

Nairobi, Kenya

July 2019 - July 2023

- First Class Honours, Grade: A (84.14)
- Graduated top of the class, the best student in the School of Engineering and Computing Sciences.
- Coursework: Software Engineering, Web Application Programming; API development; Scientific Research; Artificial Intelligence; Machine Learning; Data Structures and Algorithms; Software Engineering; Databases; Cryptography and CyberSecurity

Software Engineering Experience

Strathmore University @iLabAfrica

Nairobi, Kenya

Jan 2023 - Jan 2025

Junior Software Developer

- Collaborating with a four-person team in the development of the Public Procurement Information Portal (PPIP). A portal, mandated by law and used country-wide for the accountability of the use of public funds.
- Migrated data from the old PPIP portal to the new enhanced one.
- Implemented the Open Contracting Data Standard (OCDS) on the PPIP portal to comply with international standards.
- Deployed the PPIP portal on a production environment ([link](#)).

Technical Skills: Laravel (PHP), Vue.js (JavaScript), Cypress, MySQL, Docker, Test Driven Development, Linux, Git, GitLab

Cafeteria ChapChap

Nairobi, Kenya

Oct 2021 - Mar 2022

Co-founder

- Developing a mobile application that allows users at Strathmore University to order and pay for meals from their phone.
- The goal is to significantly improve queueing time by eliminating dependence on human cashiers.
- The project won **1st prize** in the first Strathmore University's Ideas Festival.
- Skills:** LDAP, React Native, Laravel, Docker, Typescript, Test Driven Development (TDD), Project Management

Research Experience

Honours Research Project (mark: 94/100)

Pretoria, South Africa

Feb 2025 - November 2025

University of Pretoria

- Research report titled: A Python Library for Explainable Problem Landscape Analysis.
- Developed a Python library for Explainable Landscape Analysis (xLA) comprising 17 xLA features.
- Showed that the developed library is effective for xLA.

Technical Skills: PyTorch, Google Colab, Python

Natural Language Processing module

Pretoria, South Africa

Feb 2025 - June 2025

University of Pretoria

- Semester research report titled: Meta-learning for Semantic Relatedness: A Comparative Study of Meta-Learning and Transfer Learning for Semantic Relatedness Tasks in African Languages using the SemRel2024 Dataset.
- Aim: determine whether meta-learning (model-agnostic meta-learning) could outperform transfer learning in low-resourced African languages STR tasks.
- Showed that transfer learning outperformed the meta-learning approach.

Technical Skills: PyTorch, Google Colab, Python

Undergraduate Final Research Project (mark: 81.94)

Strathmore University

Nairobi, Kenya

Apr 2022 - Dec 2022

- Developed a deep learning model for segmentation and classification of melanoma skin cancer lesions.
- Carried out a comparative study of fine-tuning 6 neural network architectures: ResNet34, ResNet50, ResNet152, InceptionV3, VisionTransformer, and EfficientNet-B7.
- Trained on an ensemble dataset of 5 different medical image datasets: MED-NODE, PAD-UFES-20, 7-point, DermIS, and DermQuest.
- Developed mobile app for taking and uploading photos of skin lesions to a RESTful API for inference.
- Sep 2024: Recognised as a 2024 Highly Commended Entrant and subsequently as the 2024 Africa and the Middle East Regional Winner by the Global Undergraduate Awards.
- Published on The Global Undergraduate Award Library (HERE)
- Technical Skills:** PyTorch, Flask, SQLite, React Native, Google Colab, Python, Talend

Skills

Programming	Systems Programming: Laravel, MySQL, Vue.js, React.js, Typescript, Git, Docker, Test Driven Development, Linux
Artificial Intelligence	Python, PyTorch, Deep Learning, Jupyter Notebook
Scientific Research	L <small>A</small> T <small>E</small> X, Research Writting
Miscellaneous	UI/UX Design, Poster Design

Volunteering

AI Literacy Society

University of Pretoria, South Africa

Chairperson

Jan 2026 - Present

- Leading registration and organising activities towards improving AI literacy within the University of Pretoria community.

Brookside Boys' Club

Pretoria, South Africa

Coordinator

Sep 2025 - Present

- Organising activities for human and cultural growth of 6-12 year olds.
- activities: Excursion, public speaking, sports, motivation talks

Strathmore University

Nairobi, Kenya

Mentor

Sep 2023 - Present

- Mentoring 5 undergraduate students pursuing undergraduate degrees in Computer Science.
- Mentoring involves informal meetings with each mentee one-on-one to accompany them with decisions in their life.

Mbagathi Study Center

Nairobi, Kenya

Secretary

Jan 2024 - Present

- Coordinating the mentorship activities for university students:
- Organised 3 weekend-long character seminars
- Organised 9 charity visits to charitable organisations attending to vulnerable groups
- Organised 1 conference for university students on the impact of AI on our humanity.
- Mentoring 4 students of Lenana High School.
- Giving class on virtuous leadership

Achievements

2025 **MasterCard Foundation Scholarship**, For BSc Honours and Msc at University of Pretoria

University of Pretoria

2024 **Global Undergraduate Awards Regional Winner**, Africa & Middle East of the Computer Science Category

Dublin, Ireland

2024 **Global Undergraduate Awards Highly Commended**, in the Computer Science Category

Dublin, Ireland

2023 **Academic Award**, Best undergraduate in the School of Computing and Engineering Sciences.

Strathmore University

2022 **Ideas Festival Winner**, Won 1st prize in an innovation competition

Strathmore University

2022 **Dean's List Award**, Best student overall in my 3rd year of undergraduate.

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2021 **Dean's List Award**, Best student overall in my 2nd year of undergraduate.

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2020 **Dean's List Award**, Best student overall in my 1st year of undergraduate.

Strathmore University

Interests and Hobbies

Leisure Reading I enjoy reading contemporary novels, history, biographies, classics, and productivity books.

Philosophy Metaphysics, Philosophy of Language, Philosophy of Science, Philosophy of Nature, Aesthetics, Anthropology

Guitar Currently learning how to play guitar.