

Tony Mogoa Ombaso

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Personal Profile

I aspire to be a leading research scientist 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.
- Final Year Thesis (mark: 81.94): Developed a deep learning model for segmentation and classification of melanoma skin cancer lesions.
- Coursework: Scientific Research; Artificial Intelligence; Machine Learning; Data Structures and Algorithms; Automata and Computability; Compiler Construction; Software Engineering; Databases; IoT; Cryptography and CyberSecurity

Research Experience

Honours Research Project (mark: 94/100)

University of Pretoria

Pretoria, South Africa

Feb 2025 - November 2025

- 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

University of Pretoria

Pretoria, South Africa

Feb 2025 - June 2025

- 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

Work 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.
- Advocated for the transition to an up-to-date and efficient development workflow by the application of the principles of DevOps.
- Technical Skills:** Laravel (PHP), Vue.js(JavaScript), Cypress, MySQL, Docker, Test Driven Development, Linux, Git, GitLab

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

Achievements

2025	MasterCard Foundation Scholarship , For Honours and Msc	<i>University of Pretoria</i>
2024	Global Undergraduate Awards Regional Winner , Africa & Middle East of the Computer Science Category	<i>Dublin, Ireland</i>
2024	Global Undergraduate Awards Highly Commended , in the Computer Science Category	<i>Dublin, Ireland</i>
2023	Academic Award , Best undergraduate in the School of Computing and Engineering Sciences.	<i>Strathmore University</i>
2022	Ideas Festival Winner , Won 1st prize in an innovation competition	<i>Strathmore University</i>
2021	Dean's List Award , Best student overall in my 3rd year of undergraduate.	<i>Strathmore University</i>
2020	Dean's List Award , Best student overall in my 2nd year of undergraduate.	<i>Strathmore University</i>
2019	Dean's List Award , Best student overall in my 1st year of undergraduate.	<i>Strathmore University</i>