



## Tinashe Jambo

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LinkedIn: <https://http://www.linkedin.com/in/tinashejambo/>

Design Portfolio <https://jambotinashe.wixsite.com/my-site>

### INTRODUCTION

I am a results-oriented, creative and versatile individual with multi-disciplinary problem-solving techniques and methodology. I hold a BSc in Mechanical Engineering with a distinction in my final year Thesis/dissertation. I have experience in programming for software development, machine learning, data analysis and engineering product design. I recently completed an MSc Mechanical Engineering degree at the University of Cape Town with a focus on Materials and Mechanics.

### EDUCATION

**M.Sc. Mechanical Engineering (Mechanics and Materials)**, University of Cape Town

**B.Sc. Mechanical Engineering (Engineering Design)**, University of Cape Town

### CERTIFICATIONS

- **CAD Certificate:** [Associate Mechanical Design Certification](#), Dassult Systèmes (CAD certificate)
- **Machine Learning:** [Supervised Machine Learning, Advanced Algorithms , Unsupervised machine learning.](#)
- **Data Analysis:** [IBM Data Analyst Professional Certificate](#)
- **Mobile and Web programming**, ([Java](#), [Swift\(iOS\)](#), [Html](#), [javascript](#) and [CSS](#)) (Hong Kong, University of Science and Technology).

### ACHIEVEMENTS

1<sup>st</sup> Year: Dean's Merit List, a list for top performing students with 75% average and above.

Final Year: Top 5 Mechanical Engineering Design Projects (Distinction Thesis/Dissertation)

### SKILLS

- **Data Analysis and Visualization** – Python, Excel, Google Sheets, Power BI, Looker Studio
- **Machine Learning:** TensorFlow, Supervised Machine learning, Neural Networks.
- **MATLAB** – Writing MATLAB code, Using Matlab to Analyse data and plot graphs
- **Databases** - SQL, BIGQUERY, IBM Db2, Mongol, Firebase
- Solid mechanics, Mechanical Vibrations
- **Finite Element Analysis** (ABAQUS)
- Fluid Mechanics - Pumps and Fluid flow calculations
- Thermodynamics – Heat transfer, Heat exchangers, HVAC
- **Mechanical Engineering Design** (CAD- SolidWorks, Design calculations, Materials)
- **Project Management:** Creating project Gantt Charts, Project documents (Scope, WBS)
- Rapid Prototyping (Arduino, 3D printing)
- Mobile App development for Android and iOS (Java, Swift)
- Front end and Backend development (Wordpress, Firebase Database, Node.js, Google Compute Engine, Node.JS, JavaScript, HTML, CSS, Angular.JS)
- Microsoft Excel – Creating excel models, organizing and analyzing data, graphs.

- Microsoft Project- Creating project Gantt Charts

## WORK EXPERIENCE

Jan 2023 – Current: Researcher, Computational and Continuum mechanics research group (University of Cape Town)

- MRI image segmentation (Simpleware, 3D Slicer)
- FEM problem configuration and computational simulations
- Evaluating Optimisation algorithms, Mult objective gradient descent and genetic algorithms
- Machine learning model implementation – feed forward neural networks
- Data Analysis – Creating dashboards from data in Power BI, Statistical analysis on Data, Utilizing python libraries i.e. pandas, scikit-learn, NumPy, Pytorch
- Created a [RAG large language model](#) (LLM) for querying research papers hosted on Azure VM instance.

July 2023 -Dec 2023: Teaching Assistant and Assistant Lecturer CIV1007S (University of Cape Town)

- Structural Mechanics course
- Lecturing supplementary examination class. Preparing supplementary examination.
- Assisting with main course student in person sessions and marking.

September 2022 – Nov 2023: **Business Development Officer**, Madam Waste Pty Ltd

- Created an automated web scrapping system to search for new RFPs on UNIDO,GIZ websites, emailing relevant RFPs to the team daily.
- Consulting in Renewable energy industry with a focus on Biogas Waste to Energy (WTE) projects
- High level report writing on new projects.
- Request for proposals selection, review and responding to selected RFP's
- Communicating and relationship building with partners for RFP responses.
- Communicating and relationship building with potential business partners.
- Reviewing Biogas Demonstration Projects completed under United Nations Industrial Development Organization (UNIDO)
- Business case building for projects for the company to undertake.
- Creating partnerships with funding organizations. Successfully established a partnership with an investment organization to review WTE projects for viability under a R150m investment fund. Africa.
- Created an automated web scrapping system to search for new RFPs on UNIDO,GIZ websites, emailing relevant RFPs to the team daily.

Dec 2021-2022 : Data Analyst: Texcite Pty Ltd

- Working with clients' datasets to derive value from data. Analyzing data for Music sales, Databases and social media data (YouTube, Facebook, Instagram) for Artists to enable stakeholders to make data driven decisions to promoted artists, concerts and event planning. (Excel, Python, SQL)
- Data Projects include: Analyzing impact of social media Adspend on music streaming, Python used for data wrangling and results presented in a report document. SQL Database queries on artists to find records done by artists, collaborations and plan for future work. Dashboard for Analyzing fan geographies and demography for tour planning based on social media following and streams. -Python was used for data wrangling and results were presented in a web based interactive dashboard. (Excel, Python, SQL)

2020-July 2022: **MSc Materials and Mechanics**, Center for Materials Engineering (University of Cape Town)

- An MSc Project Funded by the Eskom Power Plant Engineering Institute on Investigating the effect of heat treatments on the tensile behavior of P91 weldments subjected to different heat treatments, using high temperature tensile testing and Digital image correlation for non-contact strain measurement to develop localized strain maps across the weldment.
- Conducting electron microscopy i.e., Light Microscopy, SEM, EDS for microstructural analysis and linking material property to mechanical properties.
- Tensile testing Analyzing experimental Data using MATLAB and creating a report and scientific

- papers on the project work.
- MSc Dissertation Submitted awaiting examination feedback.

2020-Current: **Academic Tutor**, University of Cape Town (MEC3067F, MEC2048S)

- Stress Analysis and materials (MEC3076F): Marking student submissions
- Mechanical Engineering design and Computer Aided Design (MEC2048S): Assisting students in tutorials in person and online tutorials, Marking student submissions.
- Engineering drawing (MEC 1007F): Assisting students in tutorials, creating tutorial example videos for e-learning, Marking student submissions.
- 3<sup>rd</sup> Year Engineering Design (MEC3082S) Marking student submissions, engaging students in online forums and in person tutorial sessions.

Jan 2021 – Nov 2021: **Peer Mentor**, MasterCard Scholarship Foundation (Volunteering)

Helping underprivileged undergraduate students under the Mastercard Scholarship plan for their academics and careers. I also planned online meetings with mentees and discuss their educational journey and future. I helped students plan for post graduate studies, obtain funding and work after studying.

Feb 2020: **Co-founder, ABCD Electricity**

ABCD Electricity utilizes satellite data to forecast Solar PV installation production and measure performance. The solution is aimed at assisting Solar PV owners schedule for preventive maintenance, cleaning and forecast their energy savings. My role was to develop the solution using Angular JS and Restful APIs. Incubated UCT GSB solution space. Designed a system to process data with: JavaScript backend for fetching satellite data via API and from inverter. An angular UI for presenting processed data on an interactive dashboard.

Jan 2021- August 2022: **Mechanical Engineer**: Texcite Pty Ltd

- Supervising engineering student interns to develop product from concepts. Projects involved design of an Impact mole, Design of a ball thrower, 3 Tone Ball mill design. Design of a walk through COVID sanitizer spraying system. Review engineering calculations and CAD models.
- Working with clients' datasets to derive value from data. Analyzing data for Music sales, Databases and social media data (YouTube, Facebook, Instagram) for Artists to enable stakeholders to make data driven decisions to promote artists, concerts and event planning.
- Data Projects included: Analyzing impact of social media Adspend on music streaming, Python used for data wrangling and results presented in a report document. SQL Database queries on artists to find records done by artists, collaborations and plan for future work. Dashboard for Analyzing fan geographies and demography for tour planning based on social media following and streams. Python was used for data wrangling and results were presented in a web based interactive [dashboard](#).
- Software development on a project basis, my latest project was to design [ticket payment portal](#) integrated to a mobile money service provider for an event for an international artist.

December 2019: **Mechanical Engineer Intern**, Graviton Pty Ltd

Designed a thermoelectric generator to power a mobile smoke machine. Design involved experimental work and thermodynamic calculations for the heatsink and heat exchanger. My role was to investigate methods to provide power to the pumping system of a smoke machine harnessing potential energy sources during its operation. The project led to research and experimental work for a thermoelectric generator.

June 2019-September 2019: **Mechanical Engineer Intern**, UCT Future water Institute

Designed a harmonically excited mixing mechanism triggered by stepping on a pedal. My role is to design a waterless urinal as part of a project by UCT Future water institute to produce urea from urine. The urea

extracted will be used to produce fertilizer and jet fuel.

June 2016- October 2018: **Mechanical Engineer**, Metal Components Manufacturers

- Using Solid Works and AutoCad for generating Engineering Drawings to specifications for manufacturing in workshop for mining equipment using. Planning layout of machinery for a gold mining plant. Creating layout drawings for engineering and civil works.
- Project management for Manufacturing for assembly and fitting, Overseeing manufacturing of parts for biscuit machines. Costing and Ordering components such as motors, drive chains and oven belts, including engineering Design calculations for resizing biscuit machines to customer spec.
- Visiting clients' factories for inspection of faulty parts, taking measurements and creating engineering drawings for replacements. Visiting customer premises to inspect faulty machinery parts and diagnose for maintenance, take measurements, and create drawings for replacement machine components e.g., shafts etc.

Feb 2014: **Founder**, Microbots (Divsol (Pvt) Ltd t/a) (Part time)

- Designed and Developed world's first Bluetooth enabled vehicle immobilization Device, [Electronic Clamp](#). The device has an electromechanical locking mechanism controlled by a smartphone. The product received recognition and [awards nomination](#) as one of the most scalable solutions at the ITU Durban 2018 representing Zimbabwe.
- Software development of parking management system with iOS, Android App and Node.js backend for Parkrite Africa. Parking management system was implemented in Zambia and processed over 50,000 parking transactions in use generating significant revenue for the client.
- Partnered with [Smart locking logic](#) Pty Ltd for a solution to address [Examination leaks](#) that affect Secondary Educational Exams integrity in Zimbabwe. The project covered exam security for 2,500 examination centers and 2 million affected students Annually and was conducted with the local examination board ZIMSEC, ministry of education.

## EXTRACURRICULAR ACTIVITIES

UCT entrepreneurs Club

## COMMUNICATION

Public speaking skills through class presentations and corporate presentations.



*We certify that*

*Tinashe Raphael Jambo*

*was admitted to the degree of*

*Master of Science in Engineering  
specialising in Mechanical Engineering*

*on 14 December 2023*

*Daya Reddy*

Interim Vice-Chancellor



*Royston Pillay*

Registrar

134893



*We certify that*

*Tinashe Raphel Jambo*

*was admitted to the degree of*

*Bachelor of Science in Engineering in Mechanical  
Engineering*

*on 19 March 2020*

A handwritten signature in black ink, appearing to read 'M. Thakeng', written over a horizontal line.

Vice-Chancellor



A handwritten signature in black ink, appearing to read 'Royston Pillay', written over a horizontal line.

Registrar

97470



# CERTIFICATE

Dassault Systèmes confers upon  
**TINASHE JAMBO**  
 the certification for  
**Mechanical Design**  
 at the level of **ASSOCIATE**



August 30 2019

Academic exam at University of Cape Town



C-VHZN75W3RM



Gian Paolo BASSI  
 CEO SOLIDWORKS



9 Courses

Introduction to Data Analytics  
 Excel Basics for Data Analysis  
 Data Visualization and Dashboards with Excel and Cognos  
 Python for Data Science, AI & Development  
 Python Project for Data Science  
 Databases and SQL for Data Science with Python  
 Data Analysis with Python  
 Data Visualization with Python  
 IBM Data Analyst Capstone Project



Feb 20, 2022

**TINASHE RAPHEL JAMBO**

has successfully completed the online, non-credit Professional Certificate

## IBM Data Analyst

This IBM Professional Certificate is earned after successfully completing 9 courses on various topics in Data Analytics. The learner understands the core principles of data analysis and has worked hands-on with a variety of data sources, project scenarios, and data analysis tools, including Excel, SQL, Relational Databases, Python, Jupyter Notebooks, and Cognos Analytics, gaining practical experience with data manipulation, data analysis, and data visualization. The earner of this Certificate has demonstrated proficiency in applying different analytical techniques by analyzing real-world datasets, creating visualizations & interactive dashboards, and presenting reports to share findings of data analysis, and is now equipped with skills for an entry-level role in data analytics.



Rav Ahuja, Program  
 Director, IBM Skills  
 Network

The online specialization named in this certificate may draw on material from courses taught on-campus, but the included courses are not equivalent to an on-campus course. Participation in this online specialization does not constitute enrollment at this university. This certificate does not confer a university grade, course credit or degree, and it does not verify the identity of the learner.

Verify this certificate at:  
<https://coursera.org/verify/professional-cert/VOU22C78INZW>



3 Courses

Supervised Machine Learning: Regression and Classification

Advanced Learning Algorithms

Unsupervised Learning, Recommenders, Reinforcement Learning



Jan 2, 2025

**TINASHE RAPHEL JAMBO**

has successfully completed the online, non-credit Specialization

## Machine Learning

Congratulations on completing all three courses of the Machine Learning Specialization! You studied modern machine learning concepts, including supervised learning (linear regression, logistic regression, neural networks, decision trees), unsupervised learning (clustering, anomaly detection), recommender systems, and reinforcement learning. You learned some of the best practices for building machine learning models. You've also gained practical skills to apply machine learning techniques to challenging real-world problems. Now #BreakIntoAI and start building your career in machine learning!

Andrew Ng, Instructor,  
DeepLearning.AI

The online specialization named in this certificate may draw on material from courses taught on-campus, but the included courses are not equivalent to on-campus courses. Participation in this online specialization does not constitute enrollment at this university. This certificate does not confer a University grade, course credit or degree, and it does not verify the identity of the learner.

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<https://coursera.org/verify/specialization/LYZ3PHW9LION>