



# Kale-ab Tessera

Software Engineer, Machine Learning Researcher



+27 766806878



kaleabtessera.com



kaleabtessera@gmail.com

## About me

Kale-ab is a young, bright and ambitious Polymath, skilled in Software Engineering and applying Machine Learning algorithms. He is also adaptable and very open to learning new programming languages, methodologies and machine learning models in order to build on his previous knowledge. He considers a great work ethic and his ability to think innovatively as his greatest strengths.

## Skills

Machine Learning and AI

Spring

ASP.NET MVC & .NET CORE

C#

Java

SQL, NoSQL

Python

Amazon AWS

React, Redux

(\*) [The skill scale is from 0 (Fundamental Awareness) to 6 (Good Understanding).]

## Education

### Msc in Computer Science

2018 - 2019

University of Witwatersrand

#### Research

Reinforcement Learning, AutoML, Neural Network Architecture.

Coursework - 86% First year Average.

Robotics.

Computer Vision.

Adaptive Computation and Machine Learning.

High Performance Computer and Scientific Data Management.

Artificial Intelligence.

Large Scale Optimization for Data Science.

### Honours in Computer Science, Cum Laude

2016 - 2016

University of Pretoria

Honours in Computer Science majoring in Software architecture and Software Security.

### B.Sc. Computer Science

2013 - 2015

University of Pretoria

The BSc (CS) degree emphasises the understanding of computer science fundamentals by offering a wide variety of computer science and mathematics courses.

### PEPPS College

2008 - 2012

Polokwane

IEB Private School.

## Research Committees

### Black in AI

2017, 2018

Reviewed papers in Machine Learning.

## Summer Schools

### Deep Learning Indaba

2017, 2018.

One week intensive Summer School covering state of the art techniques in Machine Learning and AI.

## Honours and Awards

2017

### Academic Honorary Colours

Was awarded Academic Honorary Colours by the Student Representative Council of the University of Pretoria.

2016

### Honours Cum Laude

80.75 % Average for Honours in Computer Science.

2015

### Amazon Prize for Best Mobile Application - COS 301 Final Year Software Engineering Project

Project involved creating a website and Mobile App that uses Computer Vision to automatically identify and tag species of Stink Bugs.

2013-2015

### Golden Key Honour Society

Was selected to join the Golden Key Honour Society as a result of being in the top 15% of my degree.

2015

### Merit Certificate for Leadership

I received this reward for leadership during my time as a House Committee member at House Boekenhout.

2012

### Matric Academics

Notable achievements include being in the Top 1% of IEB IT Matric Students and receiving 7 Distinctions with an average of 87%.

2012

### Deputy-Head Boy

Was selected as deputy-head boy of my school in my matric year.

2012

### Academic Honours and Cultural Colours

Academic Honours were awarded for receiving Academic Colours (average above 80%) three years in a row. Cultural colours were awarded for excellence in various cultural activities such as chess and newspaper editing.



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## Experience

### Intermediate Software Engineer

Oct 2017 - Present

Entelect

Full Stack Development:

- Front-End: React, Redux, Redux Saga, Jest and Enzyme.
- Integration Layer/Backend: Spring Boot, Maven.
- Databases: MongoDB.
- DevOps: Docker, Openshift, Jenkins, Linux.
- Data : I was tasked with managing a data catalog of tens of thousands of Mobile Phones (at Cell C). I had to collect this data from external sources via APIs, clean the data via automatic scripts, backup the data using mongodump, recover data in case of emergencies and provide search functionality on the data.

### Software Engineer

Jan 2016 - Oct 2017

RetroRabbit

Full Stack Development:

- Front-End: Angular JS 1 , React and Redux.
- Integration Layer/Backend: .NET MVC 4.5.2, .Net Core 1.1 .
- Databases: SQL Server, MySQL.
- DevOps: Amazon AWS - EC2 and RDS instances, Web Servers (IIS).
- Data : I had to write advanced SQL stored procedures and functions, which ran efficiently on large data.

### Internship

Sept 2015 - Nov 2015

RetroRabbit

Learned about various interesting topics including Source Control, Cloud Computing (Amazon AWS) and IoT.

### 2 weeks vacation work

July 2015 - July 2015

BBD

Requirements - Android Application, use of .NET MVC 4.5 Framework for the back-end and management of a SQL Server database.

### House Committee Member, Secretary, Head of IT and Communications

Sept 2014 - Sept 2015

University of Pretoria

Helped lead various residence students and mentored those with academic difficulties and I solved technical IT related issues.

### Teaching Assistant, COS 212

Feb 2015 - Jun 2015

University of Pretoria

As a teaching assistant for Data Structures and Algorithms it was crucial to identify and recognize all the classical data structures; implement them in different ways; know how to measure the efficiency of implementations and algorithms.

### Teaching Assistant, COS 110

Jul 2014 - Dec 2014

University of Pretoria

As a teaching assistant for Program design and Programming techniques, it was crucial to have good knowledge of object-oriented (OO) programming, and concepts including inheritance and multiple inheritance, polymorphism, operator overloading, memory management (static and dynamic binding) and encapsulation.

## Skills

- Languages: Python, Java , Javascript, C# .
- Frameworks: Pytorch, Tensorflow, Spring Boot, ASP.NET MVC, .Net Core, React and Redux.
- Devops : Amazon AWS (EC2 and RDS), GCP, Docker, Openshift, Jenkins, Linux.
- Databases: Mongo, SQL Server and MySQL.

## Online Courses

- Introduction to Python for Data Science- Edx
- Machine Learning by Stanford- Coursera