

# PATRICK MOEHRKE

TASSA | Actuarial Consultant

I am an aspiring actuary with a strong focus on developing open-source technologies for reporting and analytics. I am also a keen software developer with a high aptitude for statistical programming & machine learning.

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patrickm663

📍 Somerset West, Western Cape, ZA

🌐 Open to on-premise, hybrid, and remote work

## ACTUARIAL QUALIFICATIONS

### Exam Passes

A111-A214

N111

N211

F104

### In Progress

A311

F105

N311

## SKILLS

### Interpersonal Skills

Teacher

Life-long learner

Self-starter

Problem solver

Innovator

Critical thinker

Collaborator

Public speaker

### Technical Skills

Bayesian statistics

IFRS 17

Automation

Dashboarding

Cloud computing

Research

Machine learning

XAI

Solution architecture

Experience analysis

Actuarial modelling

### Tech Stack

Julia

Python

R

SQL

Bash

Turing.jl

Shapley

Docker

Linux

LaTeX

GitHub Actions

AWS

Git

Streamlit

Microsoft Excel

Terraform

VBA

## AWARDS

- Member of Golden Key International Honours Society
- Stellenbosch University Dean's Merit List: 6 Subjects
- Stellenbosch University Merit Bursary

## EXPERIENCE

### Actuarial Consultant | Actuaritech

📅 July 2020 – Present

#### Analytics

- Assisted in delivering & presenting end-to-end mortality experience analyses to management of a South African life insurer.
- Conducted research into various ways open-source packages can improve actuarial analytics, including deep learning and Bayesian analysis using Julia.
- Developed and presented training material on actuarial data science to actuarial functions (mainly South African & UK life insurers). Software included R, Python, SQL, GitHub & serverless AWS services.
- As part of a global research team, conducted research on AI risk for actuarial teams. This included fairness modelling, evidencing proxy discrimination & demonstrating model explainability techniques using driver telematics data.

#### Reporting

- Assisted in delivering a fully retrospective Opening Balance under IFRS 17's GMM and VFA measurement models for a South African life insurer.
- Engaged with auditors to provide a first draft of IFRS 17 VFA methodology for a South African subsidiary of a UK life insurer.
- Developed, architected, and deployed a serverless data management and dashboarding solution on AWS to report financial results aligned to IFRS 17 at a reduced cost vs off-the-shelf solutions.
- Developed, tested, and documented a financial reporting solution for a South African life insurer to ensure compliance with IFRS 17.
- Assisted in developing & presenting workshops on IFRS 17 to members of the Lloyds of London.

#### Infrastructure

- Identified and documented risks present in the current architecture of a multi-national reinsurer's actuarial & financial reporting solution, and proposed a future implementation state to stakeholders.
- Architected, tested, and developed a low-cost, full-stack serverless web app to conference attendees over 3 days, handling +3 000 API calls with zero failures. The application used a NoSQL database to track attendee details as well as REST API calls to Lambda functions to read and write to the database and perform input sanitation.

### Academic Tutor | Stellenbosch University

📅 January 2020 – July 2020

I served as an academic tutor for Actuarial Science 112 (financial mathematics). This included mentoring, explaining mathematical topics in simple terms & reviewing assignments.

## CERTIFICATIONS

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- AWS Solutions Architect Associate
- AWS Certified Cloud Practitioner

## INTERESTS & HOBBIES

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### Interests

Cloud native technologies

Scientific machine learning

Probabilistic programming

Game development

### Hobbies

Reading

Travelling

Gymnastics

Video games

Recreational programming

## REFERENCES

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Available upon request.

## EDUCATION

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### BCom Honours Actuarial Science | Stellenbosch University

📅 Jan 2020 – Dec 2020

#### Research Project

Evaluating the use of genetics to calculate risk premiums with applications to Huntington's Disease. Supervisor: Mr Werner Weber, FASSA

#### Subjects

Actuarial risk management, financial engineering, extreme value theory, statistical programming in R & communication.

#### Campus Activities

Maties Gymnastics Chairperson & USSA Gymnastics Vice-chairperson.

### BCom Actuarial Science | Stellenbosch University

📅 Jan 2017 – Dec 2019

#### Subjects

Actuarial science, statistics, computer science, mathematics & economics.

#### Campus Activities

Maties Gymnastics Treasurer & USSA Gymnastics Vice-chairperson.

### IEB National Senior Certificate | Beaulieu College

📅 Jan 2012 – Dec 2016

IEB matric certificate with an A average. Awarded top achiever in 3 subjects.