

# 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 L<sup>A</sup>T<sub>E</sub>X  
GitHub Actions AWS Git  
Streamlit Microsoft Excel  
Terraform VBA Shiny

## CERTIFICATIONS

- AWS Solutions Architect Associate
- AWS Certified Cloud Practitioner

## 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.

# AWARDS

- Member of Golden Key International Honours Society
- Stellenbosch University Dean's Merit List: 6 Subjects
- Stellenbosch University Merit Bursary
- Maties Gymnastics *Matie of the Year*

# INTERESTS & HOBBIES

## Interests

- Cloud native technologies
- Scientific machine learning
- Probabilistic programming
- Game development

## Hobbies

- Reading
- Travelling
- Gymnastics
- Video games
- Recreational programming

# REFERENCES

Available upon request.

# EDUCATION

## 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 & communications.

### 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.

### Activities

Maties Gymnastics Treasurer, USSA Gymnastics Vice-chairperson & Helderberg Men's Residence Entrance Captain.

## IEB National Senior Certificate | Beaulieu College

📅 Jan 2012 – Dec 2016

### Subjects

IEB matric certificate with an A average. Awarded top achiever in Accounting, Mathematics & AP Mathematics.

### Activities

Prefect (Head of House). Rugby, water polo & chess.