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 probabilistic programming, machine learning & cloud computing.

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○ patrickm663
📍 Somerset West, Western Cape, ZA
🌐 Open to on-premise, hybrid, and remote work

SKILLS

Interpersonal Skills

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
Neovim | Microsoft Excel
Terraform | Streamlit | Shiny

ACTUARIAL EDUCATION

Exam Passes

A111-A214 | N111 | N211
F104

In Progress

A311 | F105 | N311

CERTIFICATIONS

- **AWS Solutions Architect Associate**
- **AWS Certified Cloud Practitioner**

EXPERIENCE

Actuarial Consultant | Actuartech

📅 January 2022 – 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.
- Co-presented on actuarial data science risk management at the ASSA 2022 and IFoA 2022 conferences.

Reporting

- Assisted in delivering a fully restrospective 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 subsidary of a UK life insurer.
- Developed, architected, and deployed a serverless data management & 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.
- Co-presented on IFRS 17 reporting using Python at the ASSA 2023 conference.

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 application to conference attendees over 3 days, handling +3 000 API calls with zero failures.
- Gained exposure to monitoring the cloud costs of actuarial systems & investigated solutions to reduce the cost of Kubernetes instances on AWS.

Junior Actuarial Consultant | Actuartech

📅 July 2020 – December 2021

Analytics

- Assisted in creating & presenting bespoke R training courses for clients in South African life insurers.
- Under supervision, conducted surveys with actuarial managers to benchmark the use of data science & analytics across South African & UK actuarial teams.

AWARDS

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

INTERESTS & HOBBIES

Interests

Cloud native technologies
Scientific machine learning
Probabilisitc programming
Video game development
Linux development

Hobbies

Reading Travelling
Gymnastics Video games
Recreational programming

REFERENCES

Available upon request.

- Co-facilitated webinars & talks to regional actuarial societies on the topic of actuarial data science.

Reporting

- Assisted in developing & presenting workshops on IFRS 17 to regional actuarial societies.
- Assisted in conducting an IFRS 17 readiness & gap analysis for a South African life insurer.
- Worked with the client to dashboard indicative IFRS 17 results under GMM & PAA measurement models.

Infrastructure

- Assisted in drafting & presenting training material aimed at actuaries wanting to understand DevOps tooling. This included material on containers, CICD, cloud, infrastructure-as-code & monitoring tools.
- Gained exposure to architectural & maintainance aspects of a Kubernetes-hosted JupyterHub platform.

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.

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, mathematical 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.