PATRICK MOEHRKE

TASSA | Actuarial Consultant

I am a nearly-qualified aspiring actuary with a strong focus on developing & contributing to open-source tools for reporting and analytics. I am also a keen software developer with a high aptitude for probabilistic programming, machine learning & cloud.

@ patrick@patrickmoehrke.com
in patrick-moehrke-05b09ab3
○ 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   VBA   Office 365
Terraform   Streamlit   Shiny
Lua   D

ACTUARIAL EDUCATION

ASSA Exam Passes

A111-A214   N111   N211
F104

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 an optimised, 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.