

Andrea Head

Senior Machine Learning Engineer | Technical Lead | MLOps Architect

Profile

An accomplished Machine Learning Technical Lead with over 9 years of experience architecting enterprise-scale AI solutions in the FinTech and Retail sectors. Specialising in Applied Mathematics and MLOps, I bridge the gap between theoretical research and production engineering. I have a proven track record of leading high-velocity teams to deliver well-defined infrastructure projects, including rapid Generative AI deployment and cloud migration for global institutions. My focus is on governance, security, and driving tangible commercial value through technical innovation.

Please [view my website](#) for past, current and personal projects.

Details

Name

Andrea Head (néé Scholtz)

Address

Somerset West, South Africa

Phone

+27 82 571 4559

Email

andrea.scholtz1@gmail.com

Nationality

South African

Employment History

Machine Learning Engineer (Technical Lead) - Equal Experts

Feb 2024 - current

Cape Town, South Africa

John Lewis Partnership, London, UK,

March 2024 - present:

- **Strategic Generative AI Implementation ("Drummie"):** Architected and deployed a production-grade RAG (Retrieval-Augmented Generation) chatbot in just **three weeks** to support the HQ relocation. Designed a novel PII-redaction layer on Google Cloud Run to secure CISO approval, achieving **90% adoption** in the first week.
- **Commercial Impact:** Spearheaded the overhaul of the Dataiku ML Platform for forecasting models to stabilise both the development and production workflows, unlocking a demonstrable return on investment of over **£40M**.
- **Platform Stabilisation & Governance:** Took administrative ownership of the legacy Dataiku platform. Through rigorous MLOps standardisation, reduced P1/P2 incidents by approximately **90%**, significantly minimising downtime for critical production models.
- **Infrastructure Strategy (GCP):** Defined the architectural standards for a "paved road" AI Platform on Google Cloud. Led the migration strategy that resulted in **40 AI Products and experiments** being deployed to this new secure infrastructure within five months.
- **Innovation:** Built an offline-first "CodeGemma" implementation for secure, local documentation generation, ensuring IP protection while enhancing developer productivity.

Médecins Sans Frontières (Doctors without Borders), London, UK,

February - March 2024 (pro bono):

- **Productionisation/operationalisation** of Machine Learning models for epidemic modelling in remote areas.

Skills

Core Technologies

- Python
- ML Frameworks (e.g. PyTorch, Keras, Scikit-learn)
- Experiment tracking and lifecycle management
- Cloud computing platforms (GCP, AWS, Azure)
- Containerisation and orchestration (e.g. Docker and Kubernetes)

Generative AI/LLM Engineering

- LLM-powered application development (local, offline, and cloud deployment patterns)
- RAG system design and implementation
- Prompt & tool orchestration
- Production considerations

MLOps and Software Engineering Principles

- MLOps Methodologies
- CI/CD and version control
- TDD and DDD

Leadership & Strategic Skills

- Data-driven Product Development
- ML Development Lifecycle Management and Agile Delivery
- Strategic Planning and execution of scalable ML solutions
- Effective team leadership
- Strong Communication Skills
- Mentorship and cross-functional collaboration
- Stakeholder engagement

Senior Machine Learning Engineer – Jumo

Apr 2022 – Jan 2024

Cape Town, South Africa

Served as Technical Product Owner for the Prediction Services Team, leading MLOps strategy and fostering collaboration between Decision Science and Engineering.

- **Funding Success:** My architectural overhaul of the model deployment pipeline was a key technical asset during due diligence, contributing directly to a successful **£2M+ funding** round.
- **Pipeline Automation:** Automated prediction model training and deployment services, scaling capacity from ± 1 model per week to **50+ models daily**. This reduced portfolio refresh timelines from weeks to days.
- **Efficiency Gains:** Developed generalised "champion" model architectures across diverse financial portfolios, reducing experimentation time by **70%**.
- **Drift Detection:** Established a real-time monitoring system that detected prediction drift in minutes rather than weeks, protecting the firm from credit risk exposure.

Machine Learning Engineer – Jumo

Jun 2021 – Mar 2022 (9 mos.)

Cape Town, South Africa

- **Production Engineering:** Automated scorecard deployment pipelines that enable rapid iteration for credit risk models in a cloud-native environment.
- **Cross-Functional Collaboration:** Acted as the engineering bridge for the Decision Science team, translating mathematical requirements into scalable production code.

Machine Learning Engineer – Praelaxis

Oct 2016 – Jun 2021

Stellenbosch, South Africa

- **Investec (2019–2021):** Architected an intelligent transaction categorisation engine that reduced manual labelling workload by **60%**, driving significant operational efficiency.
- **Capitec Bank (2016–2019):** Co-led the deployment of a first-of-its-kind live SMS data feature, handling high-velocity data throughput at a scale previously unseen in the South African market.

and strategic alignment

Links

LinkedIn

<http://tiny.cc/AndreaScholtz>

Personal

<https://andreascholtz.tech>

Interests

Continuous Learning

Reading current research

Life Sciences

AI Ethics

Music

Education

MSc, Applied Mathematics

(cum laude),

North-West University,

Potchefstroom

(2013 - 2015)

Specialisation in Numerical Analysis, Control Theory, Optimisation and Mathematical Epidemiology.

BScHons, Applied Mathematics

(cum laude),

North-West University,

Potchefstroom

(2012).

Awarded Best Student in Mathematics 2012

BSc, Computer and Mathematical Science *(cum laude)*,

North-West University,

Potchefstroom

(2007 - 2011)

- **Cloud Leadership:** Instrumental in establishing Capitec's cloud computing platform during a period where it was ranked "**Best Bank in the World**" (Lafferty Group). Helped position the bank as a pioneer on the African continent for cloud data operations.
- **Security Governance:** Led a complex security hardening initiative, migrating legacy services to secure Azure environments and establishing governance standards that became the bank's best practice.

Lecturer - North-West University

Jan 2014 - Sep 2016

Potchefstroom, South Africa

- Lectured undergraduate modules in Mathematical Modelling, Linear Algebra, and Differential Equations, fostering the next generation of STEM talent.

Junior Lecturer - CTI Education Group

Aug 2011 - May 2014

Potchefstroom, South Africa

- Lectured on Statistics and Mathematics for Social Sciences to undergraduate students.

References

Available upon request

