

HANNAH DE NOBREGA

Availability: EU, Southern Africa, willing to relocate
English, German, Afrikaans
hannah.de.nobrega@gmail.com

WORK EXPERIENCE

Junior Economist

South African Reserve Bank

March 2021 – present

Pretoria, South Africa

- Conduct research supporting economic policy formulation by providing accurate economic information, well-considered analysis and recommendations.
- Build **macroeconomic models using machine learning** that aid inflation targeting and price stability.

Data Analytics Intern

Cognician

April 2021 – Jul 2021

Cape Town, South Africa

- Employed report automation, report analysis, client facing reporting, internal metrics gathering and refining, some ETL skills
- Contributed to whitepapers

Economics tutor

Stellenbosch University

July 2020 – Jan 2022

Stellenbosch, South Africa

- Planned lessons for allotted time to strengthen weak subjects, and build skills.
- Collaborated with students to complete homework assignments, identify lagging skills and correct weaknesses. Set test questions.

Marketing Strategist

CoviID

Jan. 2019 – Feb. 2020

Cape Town, South Africa

- Worked on product roll-out strategies and business-to-business networking for a new application called CoviID
- Worked with MIT tech specialists and business development teams. Learnt a lot about the difference between high-tech and low-tech personable outreach.

General Manager

Hanks Whisky Bar

Jan. 2019 – Feb. 2020

Stellenbosch, South Africa

- Restructured and rebuilt a previously failed business.
- Coordinated innovative strategies to accomplish objectives and boost long-term profitability.
- Developed and implemented favourable pricing structures balancing firm objectives against customer targets. Organized and oversaw a business portfolio bringing in 75 percent of revenue objective in the first three months.

Volunteer

Love Volunteers

Jun. 2018 – Jul. 2018

Rwamagana, Rwanda

- Assisted with teaching, helped build a home, as well as supported agriculture and women's empowerment.

EDUCATION

Master of Commerce, Stellenbosch University | *Economics*

Jan. 2021 – Dec. 2021

Thesis : *Detecting wealth inequality by distinguishing constraints on financial inclusion within a heterogenous agent model*

Subjects : **Data Science**, *Macroeconomics*, *Econometrics*, **Advanced Time Series Econometrics**, *Advanced Macroeconomics*, *Advanced Microeconomics*, **Financial Econometrics**

Supervisor : Dr. D. van Lill

Bachelor of Commerce Honours, Stellenbosch University | *Economics — Financial Management*

June. 2016 – Dec. 2020

Thesis : *Liquidity creation by the South African banking sector and its impact on the real economy (Summa Cum Laude)*

Subjects : **Mathematics**, *Microeconomics*, *Macroeconomics*, **Econometrics**, *Economics of Education*, *Economics of Technological Change*, **Financial Economics**, *Monetary Economics*, *Industrial Organisation*

Supervisor : Dr. G. Du Rand

SKILLS

R	Time series analysis by state space methods, volatility modelling, copula modelling, scientific machine learning, classification, regression, clustering, dimensionality reduction, model selection , pre-processing,, portfolio optimisation , nowcasting , data analytics and visualisation, report automation , Bayesian method for time series
Python, Julia	Scientific machine learning , deep learning , macroeconomic models, semi-structural economic modelling, functional analysis and measure theory , continuous-time heterogeneous agent modelling, kalman filtering
Modelling	Monte Carlo and simulation , developing new models across a wide range of financial asset classes; researching and prototyping mathematical and empirical models
Github	Personal use for storage of projects, collaboration, servers
Eviews	Macroeconomic modelling, nowcasting
Stata	Cross sectional analysis
Matlab	Dynare, macroeconomic modelling, term structure modelling
Terminals	Bloomberg , Haver, Reuters
Microsoft Office Suite	Microsoft proprietary database tools
Cloud computing	GPC and Azure - Databricks

RESEARCH

HANK model for the South African economy using Bayesian analysis R	2022
Stellenbosch University	
Liquidity creation by the South African banking sector using Bayesian analysis R	2022
Stellenbosch University	
The interaction between carry trade and monetary policy R	2022
South African Reserve Bank	In progress
Rand exchange rate forecasting <i>Python</i>	2022
South African Reserve Bank	In progress
Semi-structural economic model for the South African economy <i>Python, Eviews, Julia</i>	2022
South African Reserve Bank	In progress
A comparison of nowcasting techniques on GDP <i>Eviews, R</i>	2022
South African Reserve Bank	In progress
Commodity price index <i>R, Python, Eviews</i>	2022
South African Reserve Bank	In progress