Ilanri van Rossum

FINAL YEAR DATA SCIENCE STUDENT,
STELLENBOSCH UNIVERSITY

CONTACT

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EDUCATION

PIKETBERG HIGH SCHOOL
91,3% matric average
2012 - 2021

STELLENBOSCH UNIVERSITY
BDatSci (focal area Computer Science)
Final Year
2022 - present

LANGUAGES

- Afrikaans – Native
- English – Fluent
- Dutch - Proficient

SKILLS

- Technical:
  - Microsoft Office
  - Docker
  - Git/GitLab
  - Linux Operating System
  - Jupyter Notebook
- Programming languages:
  - Python (NumPy, Pandas, Matplotlib, Seaborn, Scikit-Learn)
  - R
  - SQL
  - Java, JavaScript, C, HTML
- Data Science & Machine Learning:
  - Data Cleaning & Preprocessing
  - Data Analysis
  - Data Visualisation
  - Machine Learning Algorithms
  - TensorFlow & PyTorch
  - Statistical Analysis & Hypothess Testing
  - LLM, NLP
- Database & Web Development:
  - PostgreSQL
  - React
  - REST APIs

SUMMARY

Enthusiastic and driven datascience student with a strong academic foundation, passionate aboutleveraging data to drive innovation and solve complex, real-world problems. With skills in coding, software engineering,web devopment, statistics and machine learning, I bring a problem-solving mindset and a commitment to continuous growth.

EXPERIENCE

DEVELOPMENT OF AN OFFLINE INTERNAL WIKI CHATBOT

VASTECH, STELLENBOSCH
Jan 2024 – Feb, Jun - Jul 2025

Built and deployed an offline chatbot for the company's internal wiki as a Dash web app, leveraging Confluence's REST API, Elasticsearch embeddings, KNN-based semantic search, and an on-prem LLM. Executed independently during a 4-week internship (extended 6 weeks for internal deployment), with 3 demos delivered to the data science team under the supervision of the Head of Data Science.

SHAREPOINT RESTRUCTURING PROJECT

FINOVATE, SOMERSET WEST
Dec 2023 – Feb 2024

Contributed to a SharePoint restructuring project, utilising the analytical skills acquired through my studies. Conducted in-depth analysis of existing data structures and devised a comprehensive roadmap for cleanup and reorganisation aligned with the updated design. Solely managed the execution of the restructuring process, ensuring accuracy and efficiency, with periodic reviews from the COO.

References available upon request

ACADEMIC TUTOR
STELLENBOSCH
2023 – present

STELLENBOSCH UNIVERSITY
2023

Served as a Math Tutor for first-year university students, facilitating weekly tutorial sessions, addressing student queries, and providing additional academic support. Assisted with exam invigilation, ensuring a fair and structured assessment environment. Developed a deeper understanding of mathematical concepts by guiding students through problem-solving techniques.
Later also served as a computer science teaching assistent for the third year module on web development. Duties included marking student projects, attenting tutorial sessions to tend to questions and invigilation of tests.

STELLENBOSCH TUTORS
2024

Worked one-on-one with high school students, providing personalised mathematics tutoring to strengthen their conceptual understanding and problem-solving skills. Adapted teaching strategies to suit individual learning styles, fostering academic confidence and improving student performance.

GENIUS PREMIUM TUITION
Dec 2024 - Aug 2025

Operating within a structured corporate tutoring environment, delivering high-quality mathematics, Afrikaans and physics instruction to high school students. Following a rigorous methodology to tailor lessons to each student's needs, ensuring measurable academic progress. Maintaining professional standards in lesson planning, reporting, and communication with both students, parents and the company.

ACHIECEMENTS

5TH PLACE / FIRST WOMEN'S TEAM AWARD | DATA SCHOOL HACKATHON
STELLENBOSCH UNIVERSITY
August 2024

Developed a computer vision solution to estimate asphalt quantities needed for pothole repairs using annotated images; recognized with the Best Women's Team award for highest-ranking all-women team.

4TH PLACE | SU LAUNCHLAB x SPATIALEDGE HACKATHON
STELLENBOSCH UNIVERSITY
August 2025

Built MediScribe during a 36-hour hackathon: an AI-powered app that transforms clinician consultations into accurate, structured medical notes, saving hours of admin work and streamlining collaboration between practices.

NOTEWORTHY GROUP PROJECTS

SECOND YEAR: DATA SCIENCE

SALES PREDICTION FOR A CLOTHING COMPANY

- Built a regression model to predict interpretable sales from a given dataset.
- Utilised clustering techniques to group different price ranges and conducted feature engineering to enhance prediction accuracy.
- Developed and optimized a linear regression model, achieving the highest R-squared value in the class due to our multi-method approach.

THIRD YEAR: DATA SCIENCE

FOREST FIRE PREDICTIONS

- Explored a Kaggle dataset to improve forest fire prediction using Random Forest Regressor.
- Gained hands-on experience with bagging and boosting algorithms, enhancing understanding despite moderate results.

BOOK POPULARITY PREDICTION ON BOOKTOK

- Scraped and analysed data to predict which books would gain popularity on the platform.
- Applied BERTopic for topic analysis of book descriptions, used Roboflow for analysing book covers, and built a custom neural network for predictions.
- While results fell short of expectations, the project deepened my knowledge of NLP techniques and neural network architecture.

DATA SCHOOL HACKATHON: POTHOLE DETECTION AND ANALYSIS

- Tackled a week-long challenge to predict material requirements for filling potholes using image datasets.
- Developed a solution pipeline including:
  1. Annotating training images.
  2. Training a custom YOLOv8 model to detect potholes and metersticks.
  3. Performing data preprocessing and feature engineering.
  4. Building and evaluating a prediction model.
  5. Proposing commercial use cases and value-added propositions.
- Achieved 5th place among 13 groups, competing against industry professionals, with creative approaches and innovative problem-solving.

THIRD YEAR: COMPUTER SCIENCE

COLLABORATIVE NOTE-TAKING WEB APP

- Designed and implemented the frontend framework using React, integrating with the backend for seamless user experience.
- Dockerised the app for streamlined deployment and scalability.
- Contributed to database schema design and backend API integration.

EVENT SYSTEM WEB APP

- Developed a platform for employees to view and RSVP to organizational events.
- Designed and integrated the frontend, including calendar views, search functionality, and event filters.

FOURTH YEAR: COMPUTER SCIENCE

SECURE CLIENT-SERVER COMMUNICATION SYSTEM

- Developed a secure, multi-featured communication platform supporting
  - text messaging (global, private, group)
  - VoIP calls (one-on-one, group)
  - voice notes
  - peer-to-peer file sharing.

- Designed client-server architecture with
  - real-time GUI
  - concurrent messaging
  - live user lists
  - call/session management.
- Ensured end-to-end security with hybrid RSA–AES encryption, including
  - key exchange
  - verification
  - encrypted communication for all data.

FOURTH YEAR: DATA SCIENCE

LAUNCHLAB HACKATHON: MEDISCRIBE – CLINICIAN ADMIN RELIEF

- Competed in a 36-hour challenge to design a solution reducing clinicians' administrative burden.
- Developed MediScribe, a Streamlit-deployed app that converts spoken consultations into accurate, structured medical notes.
- Built a solution pipeline including:
  - Transcription using AssemblyAI
  - Structured JSON output with Llama-4
  - Validation via a NER model pre-trained on clinical notes
  - Full-stack web app with text editor highlighting uncertain/missing fields
  - Integrated database to enable secure inter-practice collaboration