Curriculum Vitae 👆

Mr. Henri B<small>RANKEN</small>

P<small>ERSONAL</small> I<small>NFORMATION</small>

♒ PLACE AND DATE OF BIRTH:	Welkom, Free-State, South Africa | 08 July 1991
🌐 NATIONALITY:	South-African
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O<small>VERVIEW</small>

I am an individual with a diverse set of skills. In light of acquiring my Master's Degree in Space Physics with *Cum Laude*, I consider myself to be a competent researcher who is adept at problem solving, mathematical analyses, modelling, and learning new skills. However, it was during my MSc that I discovered my bigger passion for Data Science and Programming in general. As such, I pivoted from the Academia field to Data Science with the help of Online Courses.

After finally landing a job at **Matogen Applied Insights** in 2019, I acquired ∼3.5 years of experience in the field of Data Science. Some notable projects during my tenure as a Data Scientist are highlighted below:

- Created a Portfolio Performance Monitor (PPM) and Credit Loss Model (IFRS 9) for a Telecommunications company based on Service Line Age files & Bureau data. This involved deploying custom-built PySpark libraries in GitHub for scalability. These exercises helped stakeholders make key decisions to maintain a safe Credit Risk Appetite.

- Built a PowerBI Dashboard for an Agricultural Client to monitor nutrient distributions of various crops on farms in South Africa. This allowed the client to pinpoint areas with severe nutrient deficiencies that needed to be remedied.

- Tailor-made a sophisticated Python algorithm to compute a more accurate water irrigation schedule (for farm crops) based on telemetry readings and weather conditions. This improved on the crude method of setting the water irrigation parameters simply based on the season of the year.

- Interrogated the colossal **Nationwide Inpatient Sample (NIS)** database (of which my data sample spanned a 7-year time window) to determine which factors strongly influenced the mortality rate in patients who received orthopaedic procedures. For example, my findings indicated that female patients with a Magnesium Deficiency undergoing hip arthroplasty have an alarming risk of mortality.

- Designed an entire suite of Tableau Dashboards for a Debt Counselling Company to closely track the performance of agents throughout the entire cycle from Lead Generation to Pack Outs. Because the Tableau Dashboard was connected with a 'live' SQL database, it eventually replaced the process of manually generating performance reports with tedious and repetitive Excel computations.

Eventually, I developed an itch for *Full-Stack Web Development*. As such, I enrolled in a **HyperionDev Bootcamp**. In 9 months, I had to master many programming languages, including: HTML, CSS, JavaScript, the MERN Stack, Java, and more. This opened up an entire new world, showing me how to manage the front and back ends of a website, how to implement sane database practices, and create simple JavaScript applications. Expanding the **"January 2023 - September 2023"** section of this **link** will give a more detailed picture of what HyperionDev taught me.

To summarize, I have a strong scientific background, a passion for programming, and a naturally curious nature. Lastly, I do not mind to wrestle with windows, but, in the end, prefer to dance with penguins 🐧

Languages

AFRIKAANS:	Mother Tongue
ENGLISH:	• Fluent. Home Language in Secondary School (**81%**)
	• Qualify Level 5 Diploma in Teaching English as a Foreign Language
	• TEFL, Teaching Business English

Education and Training

2023/01–2023/09
- A fulltime student of the HyperionDev Full Stack Web & Software Engineer Bootcamp. HyperionDev is accredited with the MICT Seta (ACC/2017/05/0005). Furthermore, this course bears 30 Credits, which is aligned to an **NQF Level 5 Qualification**.
- Please click on this link to view my entire HyperionDev Profile
- I received a "Student of the Month" Award for my commitment to excellence and continuous improvement
- Expand the "**January 2023 – September 2023**" section of this link to view some Git Repos I created during this course

2022/08–2022/12
- Qualify Level 5 Diploma in Teaching English as a Foreign Language (The TEFL Academy)
- Classroom TEFL Course Certificate (20 Hours)
- TEFL, Teaching Business English (30 Hours)
- The completion of my own Japanese Language Studies book, which took 4+ years. Without a doubt, this is the project I'm most proud of!

2019–2022/07
Data Scientist at Matogen Applied Insights

2018
- Completed Online Courses at Udemy and DataCamp with a strong focus on **Python Data Science**, **Machine Learning** and **Linux Essentials**
- Attended PyConZA 2018 in Johannesburg

2017
- Internship at the **Centre for Space Research**, Potchefstroom
- Completed the '**Data Science with Python**' Track on DataCamp (Certificate Number #13,897)
- Completed the 2017 **Advent of Code** challenges. My Python solutions may be viewed in this repo

2014–2016
Master of Science in SPACE PHYSICS, **North-West University**, Potchefstroom
DISSERTATION: "Weighing dark matter in brightest cluster galaxies"
SUPERVISOR: Prof. Ilani LOUBSER
AVG. SCORE: 85%, *Cum Laude*
Awarded as the top achiever on Master's level in the Centre for Space Research (for the year 2016)

2013
Honours Bachelor of Science in PHYSICS, **North-West University**, Potchefstroom
AVG. SCORE: 92%, *Cum Laude*
Awarded as the top achiever in Honours in Physics

2010–2012
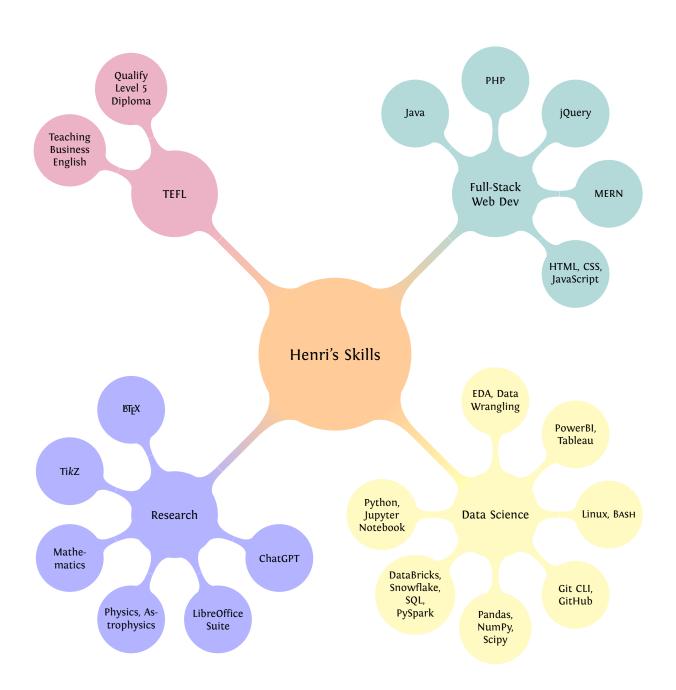Bachelor of Science in PHYSICAL AND CHEMICAL SCIENCES, **North-West University**, Potchefstroom
Majored in Physics and Applied Mathematics
3RD YEAR AVG. SCORE: 95%, *Cum Laude*
- Awarded as the top achiever in the 1st, 2nd, and 3rd years of the Physics curriculum
- Awarded as the top student in the Faculty of Natural Sciences for the 1st and 3rd years of study
- Supplemental Instruction Leader for the 2011 Term in Mathematics (1st year level)

2009
Matriculated with 8 distinctions from **St. Andrew's Private School**, Welkom
AVG. SCORE: 89%, *With Distinction*

Henri's Skills

TEFL
- Qualify Level 5 Diploma
- Teaching Business English

Full-Stack Web Dev
- Java
- PHP
- jQuery
- MERN
- HTML, CSS, JavaScript

Research
- LaTeX
- TikZ
- Mathematics
- Physics, Astrophysics
- LibreOffice Suite
- ChatGPT

Data Science
- EDA, Data Wrangling
- PowerBI, Tableau
- Python, Jupyter Notebook
- Linux, BASH
- DataBricks, Snowflake, SQL, PySpark
- Pandas, NumPy, Scipy
- Git CLI, GitHub

Academic Record

Click here to view my official University Academic Record.

Master of Science in Space Physics (2014–2016)

Module	Grade (%)	Credit (Hrs)
Astro Physics I	89	16
Astro Physics II	67	16
Transport Theory	98	16
Dissertation	85	132
	Average: **85**	Total: 180

Honours Bachelor of Science in Physics (2013)

Module	Grade (%)	Credit (Hrs)
Classical Mechanics	91	16
Quantum Mechanics I	92	16
Electro Dynamics	99	16
Plasma Physics	88	16
Quantum Mechanics II	87	16
Statistical Mechanics	100	16
Computational Physics	94	16
Project I	87	8
Project II	90	8
	Average: **92**	Total: 128

Bachelor of Science in Physical and Chemical Sciences (2010–2012)

	Module	Grade (%)	Credit (Hrs)
3rd yr: 2012	Electromagnetism	97	16
	Wave Mechanics	94	16
	Thermodynamics	99	16
	Nuclear Physics and Elementary Particles	96	16
	Astro- and Space Physics	99	16
	Partial Differential Equations	96	16
	Numerical Partial Differential Equations	92	16
	Optimalisation	87	16
		Average: **95**	Total: 128
2nd yr: 2011	Electricity and Magnetism	97	8
	Optics	99	8
	Special Relativity	98	8
	Introductory Quantum Physics	98	8
	Dynamics I	95	8
	Differential Equations and Numerical Methods	88	8
	Dynamics II	90	8
	Numerical Analysis	94	8
	Analysis III	96	8
	Linear Algebra I	84	8
	Analysis IV	82	8
	Linear Algebra II	91	8
	Understanding the Natural World	75	12
	Science and Society	87	12
		Average: **91**	Total: 120
1st yr: 2010	Introduction to Academic Literacy	81	12
	Academic Literacy	85	12
	Introductory Inorganic and Physical Chemistry	85	12
	Mechanics, Oscillations, Waves, and Theory of Heat	99	12
	Electricity, Magnetism, Optics, Atomic & Nuclear Physics	96	12
	Programming for Engineers I (C++)	86	12
	Programming I (Java)	97	12
	Applied Mathematics	95	12
	Introductory Algebra and Analysis I	99	12
	Introductory Algebra and Analysis II	98	12
		Average: **92**	Total: 120

Matric Results (2009)

Subject	Grade (%)
Music	86
Afrikaans First Additional Language	91
English Home Language	81
Mathematics	95
Life Orientation	90
Life Sciences	80
Physical Sciences	86
Additional Mathematics	98
	Average: **89**

REFERENCES

Please don't hesitate to reach out to Professors **Christo Venter** or **Stefan Ferreira**, who are currently conducting research and teaching at the Physics Department of the North-West University's Potchefstroom Campus.

Other contacts of interest would be:

- **Mr. Jacobus Eksteen**, the CEO of the Data- and Decision Science Division of **Matogen**.
- **Mr. Bayan Dekker**, the Managing Director of **Versuro International**.
- **Tina Marx**, Senior Data Architect at **MatogenAI**.

TRIVIA

- I enjoyed completing the 2017 **Advent Of Code** (AoC) challenges. AoC is a series of small programming puzzles for a variety of skill levels. Click **here** to view my personally-crafted Python 3.x solutions. While working thought the puzzles, the following quote from Richard Stallman resonated with me: *"Being a hacker means appreciating playful cleverness."*

- I have cultivated a deep **fascination** for Japan and the Japanese Language. I am currently learning essential Japanese Kanji. Click **here** to see a preview of my diligent efforts in mastering this challenging yet rewarding language.

- I am currently at WaniKani Level **18**. **WaniKani** is an online platform designed to help Japanese students master kanji characters and vocabulary efficiently through a Spaced Repetition System (SRS).

- Many people have pointed out that I am a very meticulous person with great attention to detail.