



# Shane Weisz

Software Engineer, Data Scientist, Machine Learning Engineer

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## About Me

I'm a level-headed problem solver, fast learner, and consistent top achiever, but also a hard worker, team player, and clear communicator.

I'm eager to leverage my academic expertise in maths, stats, computer science and machine learning, together with my strong programming ability and software engineering experience, to build and deliver software products that the world needs.

I'm a passionate believer in the power of technology to make a difference.

## Technical Stack

- Python
- SQL
- Java
- TypeScript
- R
- HTML, CSS, JavaScript

## Certifications

- Coursera Deep Learning by Andrew Ng
- Neural Networks and Deep Learning
- Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization
- Structuring Machine Learning Projects
- Convolutional Neural Networks
- Golden Key Society Member

## Academic Qualifications

- 2021 – **MPhil in Machine Learning and Machine Intelligence (Distinction, GPA: 80.14)** University of Cambridge  
Research project: *Automating Counterspeech in Dialogue Systems* (see thesis [here](#), interactive demo [here](#) and academic transcript [here](#))
- 2020 **BSc (Honours) in Computer Science (Distinction, GPA: 86.89)** University of Cape Town  
Research project: *Community Network Traffic Classification using Convolutional Neural Networks*. Published in: *e-Infrastructure and e-Services for Developing Countries* (see thesis [here](#) and publication [here](#))
- 2017 – **BSc in Computer Science, Mathematics, and Mathematical Statistics (GPA: 95.96)** University of Cape Town  
15 Class Medals, 100% for every Maths course, distinction in all three majors (see academic transcript [here](#) and reference [here](#))
- 2012 – **IEB Matric Certificate (Average: 97%)** St David's Marist Inanda  
Dux Scholar, IEB Outstanding Achiever, 100% for Maths and Science (see Matric Certificate [here](#) and reference from Deputy Headmaster [here](#))

## Work Experience

- Jan – **Backend Software Engineer** Nomanini  
July 2021 Contributed to a microservices backend architecture built predominantly with TypeScript and Node.js, running as Docker containers on a Kubernetes cluster. My work included extending the platform by integrating with 3rd party APIs, adding new product features, and maintenance of the existing platform. I obtained significant experience with both REST and GraphQL APIs. Technologies most frequently used include TypeScript, Node.js, GraphQL, MySQL, Google Cloud Platform, GitLab CI/CD, Docker, Kubernetes, Helm and Argo Workflows.
- June – **Data Science Intern** Isazi Consulting  
July 2019 Wrote Python and Bash scripts for the refinement of the Tesseract OCR engine, by generating character-level confusion matrices that are supplied as weights to the Levenshtein string distance algorithm.
- July 2017 **Programming Intern** Corion Capital  
Built various statistical modules and functions using Ruby – used for equity benchmarking and option pricing.

## Academic Accomplishments

- 2021 **Skye Cambridge & Mandela Magdalene Cambridge Scholarship** University of Cambridge  
**Oppenheimer Memorial Trust Scholarship**
- 2020 **Class Medals (for Highest Achieving Student)** University of Cape Town
  - MAM4019Z (Graph Theory)
  - CSC4021Z (Compilers)
  - CSC4025Z (Artificial Intelligence)**Roderick Noble Scholarship**  
**UCT Council Honours Merit Scholarship**  
**NRF Postgraduate Scholarship**
- 2019 **Class Medals (for Highest Achieving Student)**
  - MAM3000W (Mathematics III)
  - STA3041F (Mathematical Statistics III)
  - CSC3002F (Computer Science III)**Dean's Merit List (2017, 2018, 2019)**  
**Investec IT Scholarship (2019, 2020)**  
**Dr Jacob Burlak Memorial Scholarship**  
Awarded to the top student proceeding to Mathematics III

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## Academic Coursework –



### Machine Learning Modules

- Deep Learning & Structured Data
- Natural Language Processing
- Automatic Speech Recognition
- Neural Machine Translation
- Dialogue Systems
- Reinforcement Learning
- Probabilistic Machine Learning



### Computer Science Modules

- Data Structures and Databases
- Theory of Algorithms
- Networks and Operating Systems
- Parallel Programming
- Compilers
- Functional Programming
- Evolutionary Computing



### Statistics Modules

- Statistical Theory & Inference
- Stochastic Processes & Time Series
- Generalized Linear Models
- Bayesian Analysis



### Mathematics Modules

- Advanced Calculus
- Linear Algebra & Abstract Algebra
- Real & Complex Analysis
- Graph Theory & Discrete Maths

## Personal Strengths —



Logical Decision Making



Attention to Detail



Time Management



Reliability



Empathy

## Additional Interests —



2018

### Class Medals (for Highest Achieving Student)

- MAM2000W (Mathematics II)
- STA2004F (Mathematical Statistics II)
- STA2005S (Mathematical Statistics II)
- CSC2001F (Computer Science II)
- CSC2002S (Computer Science II)
- INF2009F (Information Systems II)

### Corporate Awards

- BSG Prize for Best Student in Computer Science II
- Saratoga Prize for Top Systems Analysis Project

2017

### Class Medals (for Highest Achieving Student)

- MAM1000W (Mathematics I)
- STA1006S (Mathematical Statistics I)
- ECO1010F (Microeconomics I)
- ECO1011S (Macroeconomics I)
- ACC1006F (Financial Accounting)
- ACC2011S (Financial Reporting I)

### Corporate Awards

- Bain Awards for Best 1st Year Business Science Student
- SAICA Awards for Best Student in Accounting I
- School of Economics Prize for Best Economics I Student

### UCT Vice-Chancellor's Scholarship

2016

**Nine distinctions in the 2016 IEB Exams** St David's Marist Inanda  
97% average, 94% or above for all subjects, 100% for Maths and Science

### IEB Outstanding Achiever

Top 1% for English, Afrikaans, Maths, AP Maths, History, Accounting, Life Orientation and Physical Sciences.

### St David's Dux Scholar

Subject prizes for English, Maths, AP Maths, History, Accounting, Life Orientation, Physical Sciences and Information Technology.

### The Malcolm Williams Trophy for English Creative Writing

## Extra-Curricular Achievements

### Sport

Southern Gauteng Hockey U14A & U16A, and St David's 1st XI.  
Selected for Gauteng North Cricket, Gauteng Central Tennis and Rand Central District Soccer at various stages of my school career.

### Coding

#### Competitions

Solved 112 problems on Project Euler - a platform offering a series of challenging mathematical and programming challenges. This places me in the top 1% of over one million users.

Top 5% in the ProHack 2020 Data Science Hackathon offered by McKinsey, optimizing the allocation of funds to countries so as to maximize predicted increase in country well-being.

### Mathematics Olympiad

Reached the Final Round of the South African Mathematics Olympiad, and placed 3rd in Gauteng in 2015 and 2016.

Member of the Southern Gauteng Mathematics Team that participated in the Southern African Interprovincial Olympiad.

Mathematics Olympiad 2011 Provincial Winner – 1st in Gauteng.

## Leadership Experience

### Volunteer Camp Counsellor

I volunteered for 8 weeks as a Madrich (counselor) at the Habonim summer camp over December 2017 and 2019, as part of a team supervising, leading, educating and inspiring a group of over 100 middle school children. Habonim Dror South Africa operates as a Public Benefit Organization with a focus on outreach and social development both within the Jewish and wider South African community (see reference from Secretary General [here](#))