

# Jehan Singh

## Curriculum Vitae

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### Personal Details

- Name: Jehan Singh
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### Personal Profile

I am a qualified electrical engineer currently working in the field of embedded systems and automation. I am interested in taking on a wide variety of engineering challenges and I can leverage my academic knowledge and additional skills to learn about and approach a wide array of problems. I am presently working towards a masters degree in nanoelectronics at the University of Johannesburg, with a focus on nanosensors. I am also interested in general electronic design, particularly embedded system design, and I have several years of experience working with Linux systems, both on desktop and with high performance computing clusters. I can effectively combine these skills to take on problems from multiple directions.

### Education

- 2021-present: Studying towards a Masters of Science in Engineering in Micro and Nanoelectronics at the University of Johannesburg
- 2016-2020: Graduated with a Bachelor of Science in Engineering in Electrical and Computer Engineering from the University of Cape Town
- 2015: Graduated from Northcliff High School with distinctions in Mathematics, Information Technology, Life Sciences, Physical Sciences, and Life Orientation, as well as a merit in Advanced Program Mathematics

### Work Experience and Notable Projects

#### Embedded Systems Engineer at Enspara: 2021-present

- Developed monitoring and control solutions for reducing the energy consumption of industrial and commercial equipment
- Maintained and upgraded existing hardware and software including a custom Linux image used on monitoring hardware

- Wrote documentation and manuals for hardware installations and software deployment
- Tools used: nodejs, node-red, python, bitbake build system, git.

## **Winning Student Cluster Competition ISC 2019**

- Competed in and won the ISC Student Cluster Competition 2019 along with my team on behalf of the Centre for Scientific and Industrial Research
- Placed first out of 14 teams: [News Article](#)
- Designed, prepared, optimized and ran benchmarks and applications on a six-node, 336 core cluster.
- Reference: David Macleod [dmacleod@csir.co.za](mailto:dmacleod@csir.co.za)

## **Penguin Data Collection Project 2018-2019**

- Designed, programmed and integrated a Raspberry Pi based embedded system for collecting images of penguins on St. Croix Island in May 2019
- Developed software which must be robust enough to run unchecked for up to six months and recover from failures
- Integrated and adapted system to support and fit with other research systems
- This was my undergraduate final project, my report and poster can be found [here](#) and [here](#).
- Reference: Justin Pead: [justin.pead@uct.ac.za](mailto:justin.pead@uct.ac.za)

## **Vacation work at ABSA Aliens**

- A two-week placement at the ABSA Aliens in January 2018
- Worked with two other students to prototype a system for locating a device within a building based on pre-existing wi-fi networks, the initial prototype can be found [here](https://github.com/KaliumPuceon/FieldMap):  
<https://github.com/KaliumPuceon/FieldMap>
- Learnt valuable skills for working with a team during development and earned a place in the ABSA bursary program

## **Undergraduate internship at MWR Information Security**

- A two-week training internship with MWR Information Security, Johannesburg in December 2017
- Received training and experience with webapp security as well as in formal reporting on such faults
- Reference: Brian Schirmacher: [brian.schirmacher@mwrinfosecurity.com](mailto:brian.schirmacher@mwrinfosecurity.com)

## Vacation work at JourneyApps, Stellenbosch

- Three-week vacation work placement at JourneyApps Stellenbosch, July-August 2017
- Worked on NodeJS API server wrapper to improve API call efficiency
- Reference: Rudolf Meijering: [rudolf@journeyapps.com](mailto:rudolf@journeyapps.com)

## Skills

- Experience using the programming languages and tools Python (including scientific computing packages), NodeJS, Lua, Pascal, and Linux Shell Scripting tools.
- Elementary or Basic knowledge of C, Perl, Java, including some Android development, HTML, CSS, and SQL
- Experience with Linux system administration and environment management across a variety of distributions and environments, including Linux cluster environments and web servers
- Competent user of both Microsoft Office packages and LaTeX document creation tools
- Significant experience with GNU/Linux Operating Systems and a long-time user of the Windows Operating System
- Experience with electronic design including practical lab testing, soldering and wiring as well as elementary skill with VLSI layout, PCB layout, and SPICE simulation
- Capable of quickly learning about new tools or systems as needed
- Skill at working with technical equipment or documents

## Additional Achievements

- Led the team that placed 1st in the 2018 South African Student Cluster Competition
- Placed fourth nationwide in the 2015 SAIP Physics Olympiad
- Part of the team that placed 1st nationwide and 27th worldwide at the World Robotics Olympiad 2013, Jakarta.
- Highest scoring student at World Scholar's Cup: South African round, 2015