

CURRICULUM VITAE  
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## PERSONAL SUMMARY

I am a young, vibrant, energetic and talented technologist with a huge interest in research and development. I leverage my knowledge and skills as a control engineer, software engineer, as well as my involvement and experiences across various research environments to drive innovation and technology. I am proactive, efficient, a quick learner and I have a strong desire for system precision and accuracy.

## ACADEMIC QUALIFICATIONS

### *Cape Peninsula University of Technology*

<b>ND:</b> Mechatronics	2011 - 2013
<b>BTech:</b> Mechatronics	2014
<b>BTech:</b> Electrical Engineering (Computer Systems)	2015 - 2016
<b>MEng:</b> Electrical Engineering (Quantum Physics Group) (Summa Cum Laude)	2016 - 2019

## EMPLOYMENT HISTORY

<b>08/2013 – 12/2013:</b>	<b>iThemba Labs: Internship</b> The aim was to develop a temperature monitoring system using LabVIEW. This project requirements required high accuracy and real-time display over a network (IoT).  Key responsibilities include: <ul style="list-style-type: none"><li>- The development of a data acquisition software with LabVIEW</li><li>- Choosing and requesting hardware components</li><li>- Integrating the developed software with NI data acquisition devices</li><li>- The development of server and client-side interfaces, with real-time viewing over a network.</li></ul>
<b>01/ 2014 – 01/2015</b>	<b>iThemba Labs: Graduate Trainee.</b> The aim was to design a 3D CNC routing device for a camera. Key Responsibilities include: <ul style="list-style-type: none"><li>- The development of a sturdy structural model using CAD software (Solidworks)</li><li>- The development of a software interface to control multiple stepper motors with C and LabVIEW</li><li>- The production of the parts from the developed 2D CAD model.</li></ul>

<p><b>01/ 2016 – 06/2016</b></p>	<p><b>CPUT: Teaching Assistant, Mechatronics, Mathematics I</b> The goal was to assist the students with learning. Some of the activities includes:</p> <ul style="list-style-type: none"> <li>- One-on-one tutorial sessions with students</li> <li>- Developing extra tutorials for students to practice with.</li> </ul>
<p><b>01/2018 - Date</b></p>	<p><b>ReLinde Group: Social Media, Video Editor &amp; Content Manager</b> Some of the tasks include:</p> <ul style="list-style-type: none"> <li>- Digital brand awareness (digital marketing)</li> <li>- Developing media content</li> <li>- Social media management</li> </ul>
<p><b>01/2019 – 06/2019:</b></p>	<p><b>CPUT – Tutor – Mechatronics, Mechatronic systems III</b> The goal was to assist the students with learning through group and one-on-one tutoring sessions.</p>
<p><b>04/2019 - Date</b></p>	<p><b>Founder and CEO of Vic3e Media and Technology Solutions.</b> A company directed at developing digital solutions to businesses and consumers. They include:</p> <ul style="list-style-type: none"> <li>- Videography services</li> <li>- Digital Marketing</li> <li>- SEO services</li> <li>- Branding</li> </ul>

## KEY COMPETENCIES

- Concept formation and designing
- Strong programming skills
  - o LabVIEW, MATLAB, Simulink, c, Java, Python, Arduino, Android, XCode, PLC's, Linux
- Mechanical Design
  - o CAD Design
    - Solidworks, AutoCAD, Edgecam, FeatureCAM, etc.
- Embedded systems (FPGA's, Xilinx)
- Scientific research
- Data acquisition design
- Strong workshop skills (Lathe, butting, drilling, etc)
- Control systems analysis and design
- Capable of integrating and interfacing electronic, programming, and mechanical elements.
- Ability to build effective working relationship with colleagues
- Thrive in research/development driven environments
- Proficient with MS Office tools (Word, Excel, PowerPoint, etc)
- Proficient with LaTeX
- Effective communication
- Leadership skills
- Digital marketing skills

## **ACCOMPLISHMENTS**

### **Research**

- I along with a team built a planting and harvesting robot. I created the algorithm to automate the system processes using a Programmable Logic Controller (PLC).
- I developed an algorithm for the adaptive control of a nonlinear pendulum using Lyapunov's 2nd method using MATLAB.
- I received a Summa Cum Laude for my master's research. It involved the characterization of a control system for a laser cooling and atom Trapping experimental setup.
  - I was able to secure funding twice from the National Research Foundation (NRF)
  - We were able to successfully obtain a cloud of cold rubidium atoms (17 micro Kelvin) in 2018 and a Best Project Progress Award from the CSIR National laser centre in 2019. (<http://bit.ly/QPRG1>, <http://bit.ly/QGRP12>)

### **Professional memberships**

The Optical Society (OSA) Member, Student Chapter, 2018-2019

Association for Computing Machinery (ACM) Student member. 2020 – Date.

### **Conference Proceedings & Presentations**

[1] *V Opeolu, K Govender, A Wyngaard, O Nemraoui, G De Jager and J Scarrott*, Analysis and Performance of a closed loop external cavity diode laser control system, in The Proceedings of SAIP2017, the 62<sup>nd</sup> Annual Conference of the South African Institute of Physics, edited by Prof. Japie Engelbrecht (SU/2017), pp. 210 - 215. ISBN: 978-0-620-82077-6. Available online at <http://events.saip.org.za>

[2] *V Opeolu, K Govender, A Wyngaard*, "Closed loop feedback control of an external cavity diode laser for laser cooling application", Oral presentation at the 63rd Annual Conference of the South African Institute of Physics (SAIP2018).

[3] *Govender, K., Wyngaard, A., Opeolu, V., Pentz, R.*, "Design, development and characterization of a magneto-optical trap for laser cooling of Rubidium atoms: a project at the Cape Peninsula University of Technology", Poster presentation at the 63rd Annual Conference of the South African Institute of Physics (SAIP2018).

### **Personal**

- HoD - HarvestHouse Christian Center Multimedia (Cape Town Branch) (2012-2019)
- Community involvement (video content, 2017) – Days for Girls International.
- Freelance Videographer (2015 - )
- Front-end android developer (Intermediate)
- I was one of the winners of a disruptive roadshow pitching event hosted by the CPU Student Development (DSA), Technology Innovation Agency (TTO) and BeBold in 2019.

### **Miscellaneous**

- SASSDA stainless steel basic and advanced course (2012)
- CCNA exploration certification (2012)
- Professional basic workshop skill training
- Laser safety course
- I developed a simple Android gallery app(<http://bit.ly/bheka-1>)

## INTERESTS

My primary interest is in developing engineering solutions for cutting-edge technologies using a combination of control and computer engineering techniques and practices for commercial usage. I am fascinated by their intermittent relationship and how they bridge into one another as this is the future of technology – machine with intelligence. I enjoy working with new and different programming languages in different controller and instrumentation types. Other interests includes music (classic blues, afro beats), travelling, and speaking of The Truth.

## REFERENCES

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