



## Personal Statement

I am a Mechatronics Engineer who is currently working as a Manufacturing Execution Systems (MES) Engineer at Aberdare Cables, Southern Africa's largest and leading supplier of intelligent energy inter-connection products and services. I have a strong background in mechatronics engineering and programming as well as excellent project management skills and experience. My agile thought process, meticulous nature and keen attention to detail are some of the major contributing factors to my success. I have four years of work experience in industrial manufacturing, two of which were in the automotive sector.

## Education

**2016 - 2020**                      **Bachelor of Science Honours Degree in Engineering in Mechatronics**  
*University of Cape Town (UCT) – Cape Town, South Africa*  
Undergraduate degree, 576 NQF credits.  
Specialization in Mechatronics Engineering

**Main subjects:** Mechatronics Design, Process Control, Instrumentation & Automation, Engineering Systems Design, High Performance Digital Embedded Systems, Control Systems Engineering, Electronic Devices & Circuits (Digital & Analogue), Signals & Systems.

**Other subjects:** Computer Science & Programming, Digital Systems, Engineering Dynamics & Statics, Applied Engineering Mechanics, Engineering Design Principles, Power Engineering & Power Electronics

**2011 - 2015**                      **National Senior Certificate (NSC)**  
*Raisethorpe Secondary School – Pietermaritzburg, South Africa*

### Highlights:

- Achieved bachelor's degree pass with seven distinctions.
- Ranked 1<sup>st</sup> place in the uMgungundlovu district of the KwaZulu-Natal Province, in the 2015 NSC Matric Examinations.
- Received the Dux Award for 1<sup>st</sup> place and academic excellence at both primary school and secondary school level. [Raisethorpe Secondary School (2015) & Allandale Primary School (2010)]
- Received Senior Science Student of the Year award (2015)
- Received 1<sup>st</sup> place subject awards in English, Afrikaans, and Life Orientation (2015)
- Achieved a 92% grade aggregate in trial examination and 93% in final examination (2015 NSC Matric)

## Work Experience

**08/2023 – present**              **Aberdare Cables (A proud member of the Hengtong Group)**  
***Manufacturing Execution Systems (MES) Engineer***

Enlisted into this role to analyse, troubleshoot, and fix the bespoke Manufacturing Execution System used at Aberdare, across all sites. As the sole system engineer and primary administrator, it is my responsibility to maintain the solution and identify opportunities for improvement. This includes ensuring system uptime, validating data integrity, maintaining network stability, generating output reports, analysing information, and proactively solving problems.

The role extends from hardware installation to software configuration of industrial automation components such as sensors, PLCs, HMIs, remote I/O devices and industrial network switches; as well as working with servers, OPC servers, optical fibre networks and Ethernet LAN networks. Previously had a blend of some Siemens, Omron and Red Lion hardware but later standardized toward Omron. On the software side I work closely with the GE Fanuc MES software suite, as well as the Cimplicity and Afcon Pulse SCADA packages.

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Ensuring system stability, uptime and data validity is critical to the success of the organization due to the deeply integrated nature of the system. The MES system serves as a middle layer, effectively bridging the gap between the ERP (SAP) system and the shopfloor; all while aligning supporting departments (such as technical, quality, engineering, and maintenance) with front-end departments (such as sales, marketing, commercial and planning) towards achieving organizational goals and targets.

I lead a diverse and dynamic team of four people comprised of a system administrator, 2x trainee system administrators and an automation technician.

Aside from my core functions, I also contribute towards other projects. I recently served as one of the technical leads on a project to create a smart, centralized control room to be used by executive management for the purposes of monitoring the various systems on site (MES, ERP, CCTV, etc.); as well as for hosting VIP visitors such as executives, suppliers, clients etc., during high-profile meetings and presentations.

**06/2021 – 07/2023      Unitrade 745 (A proud member of the Metair Investments Ltd Group)**

#### ***Mechatronics Engineer***

Walking into a middle management position at my first professional engineering job was a daunting but very rewarding experience that helped me grow and develop rapidly. I gained invaluable skills and experience in a short space of time and was quickly recognized for my attention to detail and always going the extra mile.

As the only Mechatronics/Electronics Engineer at the company, it was my responsibility to provide technical breakdown support to the production, engineering, and maintenance departments with a key focus on industrial automation, electronics, PLCs, Drives, HMIs, integrated systems, IT, OT etc. I got involved in preventative maintenance efforts and upgrade projects, and I served as the chief liaison with external automation and system integration specialists.

I soon became a very versatile and dependable employee, often being called upon to work closely with senior management on projects and daily operations. My diverse skillset and “can-do” attitude resulted in me being appointed as the project lead on several, high-profile projects, even though I was the youngest employee at the company. Additionally, I played a very active role in strategy meetings, 6S walkabouts, safety, quality control and decision making. Below you will find a summary of some of the projects I was involved in.

#### **1. Ford Project (January 2022 – July 2023)**

Gained significant project management experience through my role as a key member in the Ford Project technical team, which was responsible for the construction of a brand new  $\pm 10,000\text{m}^2$  factory facility. I was primarily responsible for the *Machinery Relocation & Installation* component of this  $\pm \text{R}200\text{m}$  project. This involved administrative planning, coordinating activities, managing contractors, liaising with suppliers and service providers as well as getting involved in the physical activities and providing feedback reports to executive management.

However, I was also involved in all other aspects of the project including *New Building Design & Construction*, *New Machinery Acquisition*, *Utilities Installation* as well as *Testing & Commissioning*. I developed project timing plans for each of these components which were updated and submitted fortnightly to the *Metair Investments Ltd* executive board and investment committee. I represented senior management in site meetings with the external professional engineering and project management teams and my exceptional communication skills got me elected as the chief liaison between the internal and external teams. I conducted regular site visits and provided executive management with progress updates on the construction work and site activities.

#### **2. Haldan MES OEE Project (October 2021 – July 2023)**

Project lead, system administrator and technical custodian of the Overall Equipment Effectiveness (OEE) system, which calculates the OEE percentage based on three primary metrics namely, *Availability*, *Quality* and *Performance*. I spearheaded the pilot phase on a single extrusion line and then expanded the system to two more extrusion lines and a multi-wire drawing line. The objective was to raise awareness around Overall

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Equipment Effectiveness (OEE) and Total Productive Manufacturing (TPM) and to automate the manual data capturing processes. The system allows for higher fidelity data capturing, data historian, richer data analysis and reporting, as well as faster response times.

The project faced several significant hurdles such as technical challenges as well as buy-in issues from the shop floor staff. These challenges were overcome through an iterative improvement process and training workshops. The system works very well and provides insights into machine downtime reasons, process inefficiencies as well as opportunities for improvement. The plan was to expand this system to all of the company's machines.

### 3. Solar PV Project (May 2022 – July 2023)

Project lead on a +R10m solar project designed as a grid-tied supplemental system to offset energy costs and reliance on the grid, to mitigate the effects of loadshedding. The new factory has approximately 5,000m<sup>2</sup> of usable roof space to accommodate over 2,000 solar PV panels. This allows for a ±800 kW<sub>AC</sub> installed capacity, capable of generating over 1,600 MWh/year, at a cost saving of approximately 51% per kWh.

My duties on this project included identifying Significant Energy Users (SEUs), analysing energy consumption data, reviewing machine specifications, liaising with suppliers, chairing meetings, facilitating site visits, reviewing designs, coordinating with contractors, critical decision making etc. Concurrently, I was exploring the possibility of integrating an energy storage system to leverage the benefits of solar generation more effectively through techniques such as *Peak Shaving* and *Time of Use Arbitrage* etc. As a member of the Unitrade ISO 15001 Energy Management Committee, I was involved in continuous improvement efforts and audit processes.

### 4. Virtual Reality Factory Tour Project (August 2022 – December 2022)

As the project lead, I successfully delivered on time and within budget on a project assigned to me by the site director. The objective was to utilize 4IR technology to create a unique experience showcasing the facilities and manufacturing processes at Unitrade 745. It was decided that an *8K Virtual Reality Factory Tour* would be presented at the Metair Investments Ltd Annual Technology Exhibition, hosted by Smiths Manufacturing in September 2022.

My key responsibilities included establishing the project requirements, meeting regularly with the service provider, preparing the factory for filming, facilitating the service provider's on-site visits, developing the script for the tour, choreographing sequences, reviewing content, and providing feedback throughout the product development cycle.

## Software Skills

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- GE Fanuc MES Software Suite (Proficy Plant Applications, Cimplicity, Historian etc.)
  - Factory Manager, Omron CX-One, Afcon Pulse SCADA
  - MATLAB, Simulink, Altium Designer, LT Spice, Logisim, SolidWorks, SketchUp
  - Programming languages include C, C++, Arduino, Python, Java, Verilog, Assembly
  - Microsoft Office Suite
  - Intermediate level IT

## Skills & Strengths

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- Excellent communication, interpersonal and diplomatic skills.
  - Effective and reliable leader. Capable of working collaboratively in diverse teams.
  - Creative and innovative as demonstrated through ideas and design choices.
  - Meticulous, attention to detail, highly organized, and always well prepared.
  - Computer literate and proficient in MS Office, with a working knowledge of IT.
  - Adept at circuit design, prototyping, and soldering; as well as design and simulation using CAE and CAD

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### Hobbies

- Small-scale DIY and Arduino projects and microcontroller programming
- Cooking, baking, puzzles, board games and problem solving
- Hiking, cycling, video games and fishing

### Interests

- I am fascinated with understanding how things work and interested in robotics, automation, IoT, AI+ML, drones, motorcycles, nature, travel, and eco-friendly development.
- My favourite sports are football, volleyball, squash, padel, and MMA.

### Training & Certifications

- Practical Skills Training Course (CPUT Bellville)  
Robotics, pneumatics, CNC work, basic hand skills (cutting, filing, drilling etc.), metrology, arc welding as well as fitting and turning.
- General Machinery Regulations GMR 2.1 training certificate.
- Lean Six Sigma White Belt training certificate.
- OEE Data Capturer (Basic level), OEE Data Analyst (Specialist level) & OEE System Administrator (Master level) training certificates.
- Many LinkedIn training certificates (MATLAB, MS Excel, Arduino, PLC, Industrial Automation, Altium etc.)
- Certifications in Leadership, Report Writing, Conflict Management, Communication, Team building, Decision Making, Emotional Intelligence, Workplace Relations etc.

### Achievements

- Selected for the Aberdare Talent Team Program which is an accelerated development and business challenge program designed to select high performing individuals within the company and groom them to realize their full potential. This is an effort to rapidly develop key individuals to fulfil strategic management positions, solve business challenges, identify key opportunities for improvement and implement innovative solutions. The company has over 1000 employees, of which only 26 nominations were presented and only 8 candidates were selected.
- Youngest out of five employees selected to participate in a *first-of-its-kind* training initiative by the Hengtong Group (HTG), in September 2024. This training program saw 31 delegates from 12 different companies, in 9 countries, within Hengtong's International Business Group (IBG); travel to Suzhou City in China to visit the Hengtong Group Headquarters as well as some of Hengtong's Factories and Industrial Parks. The purpose of this prestigious training program was to learn about Hengtong Group's humble beginnings, rich history, transformational milestones, local and global business strategies, as well as their diverse projects portfolio, product ranges, and corporate culture.

### References (Further references available upon request)

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