VALDEN PILLAY

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Durban, KwaZulu-Natal

SUMMARY

As a talented and driven Electronic Engineering (light current) graduate that attained 19 distinctions, who is seeking the role of a junior Process Technician to begin my career. My aim focuses on the application of the skills and knowledge attained into an innovative working environment as I bring a blend of technical proficiency and a strong academic background which positions me as a qualified and competent individual.

PART-TIME WORK EXPERIENCE

The BnV Emb. Co. (Mechatronic Technician) **01/2024-12/2024**

- Provided technical support timeously for CNC machinery, Motor drives and PSUs. Repaired an additional machine saving a crucial asset worth R225 000.00, which increased daily productivity by 50%.
- Analyzed electro-mechanical control system diagrams for repairs. Performed stock control and provided resilient service for clients to maintain relations which enabled me to settle my tuition fees.
- Managed and trained multiple candidates to program and operate the Industrial Tajima 3-axis (X, Y, Z) CNC embroidery machine to educate others while demonstrating my professionalism as a leader.

EDUCATION

Durban University of Technology **02/2020-12/2024**

- (BEngTech) Electronic and Computer Engineering (NQF Level 7)

SKILLS

Hard Skills

- Instrumentation and Control Systems (Automated manufacturing Machinery, PLC's).
- Sound knowledge of Electro-mechanical parts (sensors and actuators for process control dynamics).
- Printed Circuit Board (PCB) Design, troubleshooting and repair (NI Multisim, Ulti board, KiCad).
- Languages: Python, MATLAB, Embedded Systems C/C++ (Bare Metal STM32, MCUs: Arduino, ESP32).
- Applied Mathematics (Digital Signal Processing, Digital Image Processing, Statistics and Data Analysis).
- Microsoft Suite (Word, Excel, PowerPoint, Outlook, Power BI).
- RF engineering (Impedance Matching, Amplifier Design using AWR for simulation).

Soft Skills

- Exceptional organizational, planning and time management skills.
- Sound communication skills (Written/Verbal).
- Problem-solving attributes, innovative thinker with high attention to detail.
- Disciplined, self-motivated and hard-working to work overtime and weekends.
- Professional conduct of engineering ethics, competencies and a high safety orientation.
- Strong interpersonal skills with a confident and technical sales mindset from the pitch to the close.
- Proficient Driver (Code 10-manual/Own vehicle), able to commute and a will to relocate.

PROJECTS

- The Dual Smart Boom Gate project for automated access control using two Arduino microcontrollers with wireless communication using the NRF modules, two ultrasonic sensors for vehicle detection and two servo motors to drive the boom gates. (Group project: 72% attained).
- The Revolution Counter project measures RPM of two motors and calculates the difference in RPM between the motors with a built-in Graphical User Interface (GUI) developed in the MATLAB environment for real-time signal processing via use of one Arduino Mega for a bidirectional system. Additionally developed a unidirectional system which compromised of two Arduino UNO microcontrollers. One Arduino was used as a writer to drive the motors while the other Arduino was used as a reader to read encoder sensor data from the two motors. The systems can be applied to any rotational actuator to measure its RPM. (Individual project: 75% attained, distinction attained).
- The R&D project to implement a DC Microgrid to provide power for an informal settlement. The project required the design of an appropriate PV array sizing, Battery Bank topology, Charge controller and relevant DC-DC converters to each household using DC powered devices.

CAREER OBJECTIVES

- **Short Term:** To gain hardcore experience within a fast-paced working environment that produces high quality work which will enable me to register with the Engineering Council of South Africa (ECSA) as a candidate engineering technologist.
- **Long Term:** To further my knowledge, skills and experience for 5 years to reach senior level at an operational managerial position which will allow me to register as a professional engineering technologist (PrEngTech) who will have an essential purpose within the company and society.

ACHIEVEMENTS: THE 19 DISTINCTIONS OF 38 MODULES

1. Fundamentals of Instrumentation 2A (P&ID diagrams, Heat Exchangers, Boilers, Vessels etc.)....93%
2. Fundamentals of Control Systems 2B (Process control of Temperature, Pressure and Flow).....75%
3. Control Systems 3A (PI, PID Controller design and tuning, PLC configuration).....84%
4. Electrical Principles 1 (AC Electricity, Single and Three phase basics and calculations).....98%
5. Electrical Principles 2 (Electricity Generation and Transmission).....81%
6. Analogue electronics 1A (PSU's, Rectifiers and Amplifiers with transistor biasing).....80%
7. Analogue electronics 1B (PWM applications and analogue timers).....77%
8. Digital electronics 1A (Digital Systems based on logic, logic gates, decoders, mux etc.).....91%
9. Digital electronics 1B (Flip-flops, Registers, Memory and processors) 84%
10. Computer and IT (Computer Hardware and Software) 80%
11. Cornerstone 101 (Team collaboration and communication skills).....75%
12. Technical Literacy (Computer Literacy and evaluation of technical documents).....78%
13. Fundamentals of Power Engineering 2A (Power electronics, DC-DC converter, DC-AC inverter) ..87%
14. Fundamentals of Signals and Systems 2A (Signals analysis, step, sine, impulse, triangular) 85%
15. Innovation Management and Entrepreneurship 3A (Renewable energy business plan).....81%
16. Electronic Design Project 3B (Revolution Counter Project that measured RPM of two motors) ...75%
17. Engineering Ethics and Professional Skills 3B (Engineering Code of Conduct).....79%
18. Digital Image Processing 3B (Object detection/Medical Image processing such as X-rays) 91%
19. RF Engineering 3B (Radio comms, impedance matching networks and RF Amplifier design).....75%