Dillon Heald

Electrical and Computer Engineering

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Education

2016–July 2020 **BSc: Eng**, *University of Cape Town*, Cape Town.
Electrical and Computer Engineering

2013–2015 **National Diploma**, *Cape Peninsula University of Technology*, Cape Town.
Electrical Engineering: Computer Systems

2014–2014 **Certificate**, *Cisco Networking Academy*, Cape Town.
Cisco Certified Network Associate level: 1 to 4

Q1-Q2 2014 **Certificate**, *CompTIA*, Cape Town.
CompTIA A+

Hardware/Software Skills

Software packages: Microsoft Windows, Linux (Ubuntu, Raspbian, Redhat), iOS, Android, Google Suite, Microsoft Office (incl. Visio/Access)

Development packages: Altium Designer, KiCAD, LTSpice, Arduino IDE, VS-Code, Android Studio, Oracle/Microsoft/My SQL

μProcessors: STM (STM32F0), Atmel (ATmega328, ATmega32U4), Microchip (PIC16F0)

Software Languages

Proficient: C, Java, Python, Assembly (ARM, MIPS), SQL, Bash, MATLAB, Octave, Julia, Latex

Familiar with: Delphi, Verilog, P4, C++

Work Experience

July 2018 - July 2020 **University of Cape Town**, *Tutor*, Rondebosch, *24 months*.
Provide students with assistance in their labs and mark their assessments for a variety of courses including:

- July - Dec. 2018 - 2nd year Analogue Electronics tutor
- Jan. - July 2019 - 3rd year Electronic Devices and Circuits tutor, 1st year KiCAD PCB design tutor
- July - Dec. 2019 - 3rd year Embedded Systems tutor
- Jan. - July 2020 - 1st year KiCAD PCB design tutor

June 2018 - June 2019 **Center for High Performance Computing**, *Super Computing Competitor*, Rondebosch, *12 months*.
Optimise high performance codes to run on our custom designed cluster computer to compete internationally at ISC'19. Additionally, the following occurred:

- Included High Performance Computer training for a week in Austin, Texas
- Designed and built our own cluster computer with bleeding edge hardware
- Competed against 13 other teams and placed first in the International Super Computing Cluster Competition of 2019

July 2016 **Intel Corporation**, *Intern Hardware Developer*, Johannesburg, *3 weeks*.
Developed a product to showcase the Intel Arduino 101 development board

July 2016 **Cobham Satcom**, *Intern Software Developer*, Westlake, *1 month*.
Developed the front-end for business software update scheduler using Embarcadero RAD studio and developed in Delphi

Jan. 2015–Dec. 2015 **Cobham Satcom**, *Assistant Electronics Technician*, Westlake, *12 month*.
Tasks for this position included:

- Investigation and repair of hardware failures for both Interface and Control Module (Main control board) and Aero Core Module (Digital-to-RF board) of the Satellite Data Unit (SDU).
- Liaise with Product Engineers on common points of failure and possible design flaws.
- Training staff on repair procedures for the SDU.
- Organise/manage departmental improvements.

Projects

The following are a few relevant projects I've designed and built

Undergrad Thesis	Directional Audio System	*Simulated, designed, implemented and tested a system to create a directional beam of audible sound*
Wireless Melody Player	RPi based wireless melody player project	*An embedded systems project consisting of two Raspberry Pis communicating over infrared based UART allowing an android app to play melodies in a remote location*
Clock	4 digit 7 segment desk clock	*A compact clock built into a wooden box powered by a ATmega328P*
Message Board	BLE controlled 384 LED message display board	*A message board powered by the Intel 101 development board which displays messages sent to it via Bluetooth low energy from a smart phone*
USB Media Controller	USB volume knob with media control keys	*An ATmega32U4 HID device featuring a rotary encoded volume knob and media keys which interact with any computer over USB to control media*
Security System	Access control system with alarm	*An Arduino Mega powered modular security system featuring a keypad, solenoid, RFID, LCD and a infrared motion sensor used to monitor and control access to a room*

Additional hardware and software projects I've worked on can be found on my Github profile:

`github.com/SnoWHandS`

References

References available on request