Christian Garry

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EDUCATION

Durham University — Durham, United Kingdom
*Meng Electronic Engineering – Expected **Upper Second Class** Honours (Third year: 60%)* — *Sep 2020 – Jun 2024*

- Relevant Modules: Electrical Engineering (**74%**), Electronics and Communications (**62%**), Semiconductors Physics and Devices (**60%**), Advanced Electronics (current), and Artificial Intelligence and Deep Learning (current)

Bishops Diocesan College — Cape Town, South Africa
NSC (*6 Subjects avg.* **82%**): Physical Sciences (**93%**), IT (**90%**), and Mathematics (**90%**) — *Jan 2007 – Dec 2019*

Self-Taught — Cape Town, South Africa
SAT Score: **1460** (**98th** Percentile) — *Jun 2019 – Oct 2019*
SAT Subject Tests (800 max score): Chemistry (**780**), Physics (**780**), and Maths II (**800**)

RESEARCH EXPERIENCE

Silicon Carbide JFET CPU — Durham, United Kingdom
Master's Dissertation — *Oct 2023 – Present*

- Created Junction Field Effect Transistor (JFET) logic gates and designed custom 4-bit architecture for use in high temperature computing applications
- Designed NAND, NOR, and XOR logic gates based on current NASA Inverter designs; created transistor-optimised custom gate logic for Carry Look Ahead Adder and other components
- Simulated JFET intel 4004 CPU in LTspice, created software tools: bespoke C-Like language and Compiler in **C++**, Assembler and script to generate PWL files for **LTspice** in **Python**

Electronic Differential System for Electric Vehicles — Durham, United Kingdom
Year 3 Project — *Oct 2022 – Jun 2023*

- Designed an electronic differential and torque vectoring system for an electric vehicle (EV) to decrease weight and cost compared to standard mechanical systems
- Collaborated with a team of 6 to identify challenges, develop solutions, and strategically align the product with key EV markets; facilitated bi-weekly meetings and reports to drive project progress
- Designed a variable frequency drive to control individual motors according to the control algorithms

Hydrogen Fuel System for Gas Turbines — Durham, United Kingdom
Year 2 Project — *Oct 2021 – Jun 2022*

- Worked with a team of 5 to design a cryogenic hydrogen fuel system for passenger jets, with a personal focus on the development of leak detection systems and integration of fuel tank sensors for temperature, pressure, and level monitoring
- Conducted comprehensive modelling of boil-off behaviour inside the tank and played a key role in designing pressure compensation systems to ensure a constant hydrogen supply to turbines during flight

LEADERSHIP AND ACTIVITIES

Durham University — Durham, United Kingdom
Weldon le Huray Scholarship, Fencing — *Oct 2020 – Present*

- Received £4,000 stipend for Fencing and represented Team Durham at weekly university-level competitions

Durham University Grey College — Durham, United Kingdom
Freshers Representative — *Oct 2022, Oct 2023*

- Spearheaded orientation week activities, prioritising inclusivity and safety for over 100 first-year students; Mentioned by name in university newspaper for contributions

Bishops Diocesan College — Cape Town, South Africa
Fencing Captain — *Jan 2019 – Dec 2019*

- Managed a team of 40; coordinated bi-weekly training sessions; placed **1st** (U17) at South African Nationals

ADDITIONAL INFORMATION

Programming Languages: Python (Advanced), MATLAB (Advanced), Pascal (Advanced), HTML (Intermediate), JavaScript (Intermediate), C++ (Intermediate)
Hobbies: Modelling (College Fashion Show), Rugby (College Team), Fencing (University Team), Gaming (University Team), Shooting (University Club), Boxing (Student Fight Night)
Languages: English (Native), and Afrikaans (Intermediate)
Awards: President's Award (DoE Gold, Silver, and Bronze)