

# Christian Garry

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## EDUCATION

<b>Durham University</b> <i>Meng Electronic Engineering – Expected <b>Upper Second Class Honours</b> (Third year: <b>60%</b>)</i> <ul style="list-style-type: none"><li>Relevant Modules: Semiconductors Physics and Devices, Digital Electronics and Digital Signal Processing, Advanced Electronics, Artificial Intelligence and Deep Learning</li></ul>	Durham, United Kingdom <i>Sep 2020 – June 2024</i>
<b>Bishops Diocesan College</b> <i>NSC (6 Subjects avg. <b>82%</b>):</i> <ul style="list-style-type: none"><li>Relevant Subjects: Physical Sciences (<b>93%</b>), IT (<b>90%</b>), and Mathematics (<b>90%</b>)</li></ul>	Cape Town, South Africa <i>Jan 2007 – Dec 2019</i>
<b>Self-Taught:</b> <i>SAT Score: <b>1460</b> (<b>98<sup>th</sup></b> Percentile)</i> <i>SAT Subject Tests (800 max score): Chemistry (<b>780</b>), Physics (<b>780</b>), and Maths II (<b>800</b>)</i> <i>A Levels: Mathematics (<b>A</b>), Physics (<b>B</b>)</i>	Cape Town, South Africa <i>Jun 2019 – Oct 2019</i>

## RESEARCH EXPERIENCE

<b>Silicon Carbide JFET CPU</b> <i>Master's Dissertation</i> <ul style="list-style-type: none"><li>Created Junction Field Effect Transistor (JFET) logic gates and designed custom 4-bit architecture for use in high temperature and high radiation environments</li><li>Designed NAND, NOR, and XOR logic gates; created transistor-optimised custom gate logic for Carry Look Ahead Adder and other components</li><li>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 <b>LTspice</b> in <b>Python</b></li></ul>	Durham, United Kingdom <i>Oct 2023 – Apr 2024</i>
<b>Electronic Differential System for Electric Vehicles</b> <i>Year 3 Project</i> <ul style="list-style-type: none"><li>Designed an electronic differential and torque vectoring system for an electric vehicle (EV) to decrease weight and cost compared to standard mechanical systems</li><li>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</li><li>Designed a variable frequency drive to control individual motors according to the control algorithms</li></ul>	Durham, United Kingdom <i>Oct 2022 – Jun 2023</i>
<b>Hydrogen Fuel System for Gas Turbines</b> <i>Year 2 Project</i> <ul style="list-style-type: none"><li>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</li><li>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</li></ul>	Durham, United Kingdom <i>Oct 2021 – Jun 2022</i>

## LEADERSHIP AND ACTIVITIES

<b>Durham University</b> Weldon le Huray Scholarship, Fencing <ul style="list-style-type: none"><li>Received stipend for Fencing and represented Team Durham at weekly university-level competitions</li></ul>	Durham, United Kingdom <i>Oct 2020 – Present</i>
<b>Durham University Grey College</b> Freshers Representative <ul style="list-style-type: none"><li>Spearheaded orientation week activities, prioritising inclusivity and safety for over 100 first-year students; Mentioned by name in university newspaper for contributions</li></ul>	Durham, United Kingdom <i>Oct 2022, Oct 2023</i>
<b>Bishops Diocesan College</b> Fencing Captain <ul style="list-style-type: none"><li>Managed a team of 40; coordinated bi-weekly training sessions; placed <b>1<sup>st</sup></b> (U17) at South African Nationals</li></ul>	Cape Town, South Africa <i>Jan 2019 – Dec 2019</i>

## ADDITIONAL INFORMATION

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