Etienne Naude

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Education

Master of Innovation Design Engineering (MSc & MA) 2023 - 2025
Imperial College London & The Royal College of Art

- Selected for the Open House 2025 exhibition of my work
- Selected for the Open House 2024 exhibition of my work
- Second in the DFS sustainable design challenge
- Deputy President of the Imperial Robotics Society

Bachelor of Advanced Computer Science (Honours)
The University of Auckland

- First Class Honours
- Honours GPA - 8.875/9 (A+) | Cumulative GPA - 7.8/9 (A)
- Selected for Science Scholars (Top 30 students in the entire science faculty)
- First in Class – Computer Science Capstone
- First in Class – Design for Additive Manufacturing
- 9 Outstanding Achievement Awards
- Elected Class representative – Computer Science 389 & 701

Experience

Robotics Engineer | Kaikaku AI 2024
At Kaikaku, I developed and prototyped **four robots,** including a sauce dispensing robot, which led new investors to reach out to the company. These robots use **computer vision** to sense and a range of actuators to improve the efficacy of a fast-running restaurant.

Software Developer | Kekeno Tech Ltd 2020 - 2023
Senior Software Developer | Kekeno Tech Ltd 2023 - 2024
I was the **lead developer** on four projects, as well as advising on a further two projects. One of the projects I created was a web app for the staff at Te Kaha - a charity that helps Indigenous youth with health and well-being. We built this web app using **Angular** for the front end and **C#** for the back end.

Maker Space Coordinator | Unleash Space 2023 - 2024
Lead Creative Technologist | Unleash Space 2019 - 2023
As a Maker Space Coordinator, I led a team of **15** creative technologists to keep the Maker Space running smoothly. I also taught **hundreds of students** and staff members about modern technologies such as **3d printers**, **CAD**, **Laser Cutters**, **CNC routers,** etc, through **hundreds of workshops**. Additionally, I work with members to **design** various projects ranging from **robotics** to jewellery. I also created a range of internal digital tools to help improve the workflow and processes of the staff members.

Full-stack Software Engineer | Halter NZ 2023
At New Zealand's leading agritech startup, I worked on the guidance system for interfacing with the embedded technology. This was done with **Python** for the backend**, React** for the front end, and **Postgres** for the Database. I helped make systems which could help guide cattle to their next location ethically.

Robotics Researcher | The University of Auckland 2021 - 2022
Creating educational robotics which allows children to program them using a tangible programming language. They could show the robots different cards with instructions, and the robots would perform certain actions accordingly. As this is a research project, we also created a system to collect data.

Projects

Lock Picking Robot 2024

I designed and built the most advanced lockpicking robot. I counterintuitively designed it to make locks more secure. It was made as an alternative to master keys, which are used widely (for example, on almost every suitcase) and have large inherent security issues. It uses a series of wires which push through a custom 3d-printed steel key blank to spoof the correct key bitting. – github.com/etinaude/unlocked

ESDA - Early Seizure Detection 2024

ESDA is a glove which uses flex-sensors to detect the hand poses in the first stages of a clonic-tonic seizure. In this project, I conducted a lot of **user interviews,** did the **mechanical design** as well as implemented a **Tensorflow Lite** model optimised to run on an **ESP-32**.

Vending Machine 2023

An outdated, broken vending machine was donated to a student organisation I ran. In a team of two, we removed all the electronics and replaced them with our own **ESP-32-based** system and created a website using **Svelte.** This vending machine was designed so that students could sell anything they created, such as candles or crocheted toys, and distribute free well-being products. The vending machine has been continuously running for over two years, and dozens of different products have been sold, and all of the profits have gone to the students who made the products. – vend.makeuoa.nz

Organised and hosted the Terrible Ideas Hackathon 2023 - Present

I hosted and organised the Terrible Ideas Hackathon, a low-barrier-of-entry hackathon, which we ran internationally across **three** countries and **four** cities, with over **300** participants. This hackathon has also been featured on a major engineering YouTube channel. – terriblehack.com

Awards

Top 20 in New Zealand National Cyber Security Competition 2023

Best Special Interest Club of the Year 2023

Best Club of the Year Runner-up 2023

SESA Hackathon Runner up 2022

Distinguished Graduate - University of Auckland 2020

Queen’s Scout Award - Scouting New Zealand 2019

This is the highest honour in youth scouting. It was awarded to me for continuous work over the span of four years in various fields, such as volunteer work, for which I did **1,000+ hrs**.

Publications

Non-planar Ironing to Improve Material Extrusion Surface Finishes 2024

I have created a **new technique** which can be used in 3d printing called non-planar ironing, which combines two previous methods to create surfaces **10x smoother** than previous techniques on the same machine.

Automated Student 3d Printing Verification Process 2024

I develop and maintain infrastructure for the Imperial College Robotics Lab, including working on our **on-premises Kubernetes** system and developing **Python** code with **PostgressDB** to automate our processes, integrating into Notion and Discord. Our work was published at ISAM 2024 – github.com/ICRS/icrs_lab

Anti-patterns in Students' Conditional Statements 2024

Building a Low-cost, Screen-free Robotic Programming Environment for Children 2023