Julian Banks

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Education

University of Cape Town

Bachelor of Science in Engineering in Mechatronics 2020 - 2023

Final year GPA: 80.93%

- Dean's Merit List
- Class Medal: Energy Conversion 2 (EEE4117F) - 92%
- Research Project: Intelligent energy management scheme of a hybrid microgrid using machine learning
- Winner of the Growthpoint Greenovate sustainable building research competition.

Additional Certificates

- Ignition 8.1 Inductive University (SCADA software) 2023
- Machine Learning with Matlab 2023
- The Complete Web developer: Zero To Mastery 2023

Rondebosch Boys' High School 2014 - 2018

Academic Distinction, NSC average: 90.7%

Deputy Head Boy

Work Experience

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iLab - Oregon State University Innovation and research engineering lab

Design Engineer and Machinist Intern Jan - Mar 2022

- Training in machine shop skills such as using a mill, lathe, CNC, plasma cutter, TIG & MIG welding, 3D printing and lazer cutting
- Practice using Autodesk Inventor CAD software
- Develping design skills from idea phase to working prototypes

RocketHour Live online coding classes

Code Tutor & Tutor Trainer Aug 2020 - 2023

- Teaching the fundamentals of code to young children in a fun, interactive online class
- Training new tutors over a 10-week training program
- Been a part of the company as we have expanded from 150 to 600 students
- Skills: Coding, teaching, employee training, power of feedback

ThingKing Interactive electronic installations

Freelance Electronic Specialist 2022 - Present

- Contributed to design and manufacture of lighting installations for Adidas
- Assisted with the fabrication of a Lipton activation
- Skills: electronic debugging and diagnoses, embedded electronics design and manufacturing

Centre for Renewable and Sustainable Energy Studies Renewable research centre

Vacation work intern July 2022

- Handled a pre-feasibility report for the installation of solar at a residential building
- Modelled the solar energy production using HOMER Pro & PVsyst

Entrepreneurial Experience

Moths Incorporated — Event lighting solutions

Co-founder — 2022 - Present

- Coordinating with my partner, we designed, iterated, and tested an events lighting system
- Programmed an interactive lighting system using C++
- Assembled an embedded solution to control the system

Jou Ma Se Soil — Indoor plant potting soil

Co-founder & Web developer — 2020 - 2022

- The sole developer for our website, programmed using React and a Heroku database
- Visualised and realised a completely sustainable product

Gap year and Sport

Gap Year — 2019

- Solo motorcycle trip through Africa, 11 countries and 17000km from Monaco to Cape Town Oct-Dec
- Deckhand on a super yacht, Monaco — May - Sept
- Worked in hospitality, coaching rowing and tutoring — Jan - April

Sport

- Stroke of the UCT first eight at SA university's Boatrace — 2021
- Winner of the Men's B pair at SA senior rowing champs — 2021
- Rondebosch Rowing Captain — 2017 - 2018
- 5 times medallist at SA schools rowing champs — 2014 - 2018

Skills

Software skills

- Python — Used to code a Reinforcement Learning environment for final year project.
- MATLAB — Mechatronics 2 extensively used dynamic modeling in Simulink. (Mark: 90%)
- React JS — This was an awesome tool to build the Jou Ma Se Soil website.
- C++ — Introduced through Embedded Systems 1 & 2, I then used it to build the software for Moths Incorporated's lighting system.
- Autodesk CAD — My engineering degree introduced me to solid modeling concepts. I was then able to put Autodesk Inventor to real use in the iLab designing prototypes.

Practical Skills

- Electronics — I have worked on many embedded systems and electronics projects with Moths Incorporated, ThingKing, and through university projects.
- Machining — Through hands-on training in the iLab and during university vac work I have spent lots of time using various machine shop tools. From welding a humanoid sculpture to precision CNC milling brackets for climate monitor systems in the iLab

References

Dr. Drummond Wengrove	iLab	Lab manager	drummond.wengrove@oregonstate.edu
Prof. Sunetra Chowdhury	UCT	Supervisor	sunetra.chowdhury@uct.ac.za
John Naiker	RocketHour	Founder & CEO	john@thinkcamp.co.za
Marc Nicolson	ThingKing	Founder & CEO	marc@thingking.co.za