

## Julian Banks

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### Education

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#### 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

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
- Prototyping and iteration of design from idea phase to working equipment

#### 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

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## Entrepreneurial Experience

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<b>Moths Incorporated</b>	Event lighting solutions
Co-founder	2022 - Present
<ul style="list-style-type: none"><li>• Coordinating with my partner, we designed, iterated and tested an events lighting system</li><li>• Programmed an interactive lighting system using C++</li><li>• Assembled an embedded solution to control the system</li></ul>	
<b>Jou Ma Se Soil</b>	Indoor plant potting soil
Co-founder & Web developer	2020 - 2022
<ul style="list-style-type: none"><li>• The sole developer for our website, programmed using React and a Heroku database</li><li>• Visualised and realised a completely sustainable product</li></ul>	

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## Gap year, Leadership and Sport

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<b>Gap Year</b>	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
<b>Leadership</b>	
• Deputy Head boy of Rondebosch Boys' High school	2018
• Scout Patrol leader	2013 - 2016
• Rondebosch Rowing Captain	2017 - 2018
<b>Sport</b>	
• 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
• 5 times medallist at SA schools rowing champs	2014 - 2018

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## Skills

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<b>Code based skills</b>	
• Python	I used Python to code a Reinforcement Learning environment for my final year research project.
• MATLAB	Mechatronics 2 extensively used dynamic modelling in Simulink and Matlab. (Course mark: 90%)
• React JS	While working through the Udemy complete web developer course, I designed and built the website for Jou Ma Se Soil.
• C++	I was introduced to C++ through Embedded Systems 1 & 2, I then used it to build the software for Moths Incorporated's custom lighting system.

## Practical Skills

- Soldering & electronics I have worked on many embedded systems and electronics projects with Moths Incorporated, ThingKing and through university projects.
- Machine shop tools 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

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