



Corné Prinsloo

Mechatronic Engineer · MEng Researcher

in/corne-prinsloo 
Namibian & South African 

I am a Mechatronic Engineer pursuing an MEng at Stellenbosch University. My research focuses on the short-field take-off enhancement of a hydrogen-powered UAV using blown flaps. It is a combination of CFD, optimisation, experimenting, and critical problem solving. Alongside engineering I have spent three years in student community leadership and I enjoy building my own tools and software whenever a process could be improved.

RESEARCH

MEng (Research), Mechanical Engineering · Stellenbosch University

2026 – 2027

Short-field takeoff enhancement of UAVs using blown flap technology · Supervised by Dr A. Venter, Dr R. Heise

- Designing an internally blown Coandă flap retrofit for a fixed-wing UAV to cut its ground roll from $\approx 100+$ m to under 10 m.
- Built a fully scripted 2D RANS pipeline in Python that generates flapped sections, meshes them with the Gmsh library and drives ANSYS Fluent through generated journals.
- Researched and compared various active and passive techniques of designing high-lift airfoils.
- Working across multiple design fidelity levels, from vortex-lattice (AeroSandbox, OpenVSP, XFLR5) to 2D and 3D RANS.
- Planning validation with a static Coandă bench, a section model in the department's low-speed wind tunnel and a propeller traverse.

EDUCATION

BEng Mechatronic Engineering · Stellenbosch University

2022 – 2026

Final-year project: Automatic Rally Detection and Video Capture for Spikeball. Used computer vision algorithms and other tracking techniques to essentially behave as a referee and highlight extractor for a Spikeball game.

Control and dynamics: State-space and frequency-domain control, PID design, observers, digital control, vibration.

Embedded systems and electronics: Microcontroller programming, digital logic, circuit design, electrical drives.

Thermofluids and aerodynamics: Fluid mechanics, boundary layers, lift and drag, heat transfer.

Mechanical design: Machine design, strength of materials, technical drawings, materials science.

AS-Levels · Windhoek Gymnasium Private School

Systems and data: Systems engineering, numerical methods, data analytics in MATLAB and R.

Skills: Problem solving, engineering design, communication and reporting, investigation and data analysis.

Professional practice: Project and production management, engineering economics, ethics, and environmental engineering.

English 1st Language

Mathematics

Physics

Chemistry

Afrikaans 1st Language (Ordinary-Level)

Accounting (Ordinary-Level)

2021

EXPERIENCE

Laboratory Engineer · Dept. of Mechanical & Mechatronic Engineering, SU

2026 – present

- Responsible for the metallography, microscopy, furnace and powder laboratories, including safety inductions and sign-off of student operators and review of safety reports.
- Improved inventory management and equipment booking systems using Microsoft Lists and Power Automate.
- Responsible for ordering consumables, keeping equipment maintained, writing standard operating procedures, and liaising with various staff members.

Vacation Intern · Emcon Consulting Group, Windhoek

Dec 2024

Bills of quantities for lighting and electronic systems; tender evaluation for HVAC, LAN and electrical services; site visits with multidisciplinary teams.

Vacation Intern · Greenplan Consultants, Somerset West Jun 2024
Modelled and simulated buildings in DesignBuilder, ran energy audits and optimised insulation and glazing to SANS 10400-XA.

Vacation Intern · Robotic Handling Systems, Brackenfell Jun 2024
Assembly, wiring and programming of an ABB robot-based machine, including I/O module code and printer error-checking logic.

LEADERSHIP

Cluster Convenor · Wimbledon Cluster, Stellenbosch University 2025 – 2026
Co-lead six student communities with a co-convenor and the Cluster Coordinator, supporting their leadership structures; responsible for governance, elections and reporting.

Co-founder and Facilitator · Ukubayi Leadership Programme 2026 – now
Designed a values-based leadership programme of four modules (Identity, Strengths, Collaboration, Impact) over 12 sessions a year, accredited by SU's Unit for Experiential Learning. Wrote all materials and lead the sessions.

Primarius · Helshoogte Men's Residence 2024 – 2025
Chaired the 16-member house committee, represented residents to the university and oversaw events, sport and logistics.

House Committee Member · Helshoogte Men's Residence 2023 – 2024
Registrar (secretary, administration and constitution) and Editorial (weekly newsletter and termly magazine) portfolios.

VENTURES & PROJECTS

nook. · nookapp.cc 2026 – present
Solo-built planning app on Cloudflare Workers and Supabase.

Kaal Vellies Kollektief · Founder 2025 – present
Photography and videography services for events, social media, and brands.

Other builds
Residence election software in Python. Personal career search software. WhatsApp and Power Automate messaging workflows.

SKILLS & LANGUAGES

TECHNICAL SKILLS

Aero & CFD · ANSYS Fluent, ICEM CFD, Gmsh, PyFluent, XFOIL, XFLR5, OpenVSP, AeroSandbox
Programming · Python (NumPy, OpenCV), C/C++, MicroPython, MATLAB, R, JavaScript, SQL, Swift
Engineering · Inventor, AutoCAD, STM32, DesignBuilder, $\LaTeX$
Automation · Power Automate, SharePoint, Supabase, GitHub Actions

CERTIFICATIONS & HONOURS

Golden Key International Honour Society, 2023
IPM Project Management Foundation, 2025
Studying toward CFA Level I

STRENGTHS

Leading and Facilitating Groups
Public speaking · Technical Writing
Systems Thinking · Building Tools
Conflict Resolution · Governance
· Critical Thinking

LANGUAGES

English · native
Afrikaans · native
German · limited working

INTERESTS

Endurance multisport (Cycling, Running, Hybrid training)
Photography and film
Wine culture
, Offroading and camping