

Ani Vermeulen

Space Systems Engineer | Space Scientist | Director: RE Consulting
 ani@entropy.co.za | English & Afrikaans | +27 72 291 4174 | Masters in Space Studies

EDUCATION

UNIVERSITY OF CAPE TOWN MASTERS IN SPACE STUDIES

Graduated Cum Laude Dec 2019
 Thesis: Detecting Ionospheric Scintillation in the SAMA using ship-based GPS data

BSC (HONOURS) IN ASTROPHYSICS AND SPACE SCIENCE

Graduated Dec 2014
 Thesis: Sudden Storm Commencements (SSCs) as drivers of Geomagnetically Induced Currents (GICs) in the South African Power Network

UNIVERSITY OF PRETORIA BENG INDUSTRIAL ENGINEERING

Graduated Sep 2009
 Thesis: Turbine Maintenance Radiation Safety in a Pebble Bed Modular Reactor

COURSEWORK

MASTERS LEVEL

Space Apps: GNSS, EO, Comms, Science | Lunar Science | Space Law | Space Mission Analysis & Design (SMAD) | Advanced SMAD | SmallSat & CubeSat Design | Rovers in Planetary Exploration | MCSS Mission Control Academy: CSA Mars Rover Driver

HONOURS LEVEL

General Astrophysics | Advanced Astrophysics | Electromagnetism | Observational Techniques (Optical, Radio, IR, X-Ray, Polarimetry) | Relativity | Astrophysical Fluid Dynamics | Computational Methods | Spectroscopy

BACHELORS LEVEL

Industrial Analysis | Operational Management | Facilities Planning | Project Management | Logistics | Simulation Modelling | Operations Research | Manufacturing | System Design | Financial Management | Materials Science | Mechanics | Machine Design | Statistics

SKILLS

Programming: Python | MATLAB | Bash | \LaTeX
 Other: Scientific Research | High-level Writing & Editing (Scientific, Academic & General)
 Practical: Welding, soldering, general tool usage. Can operate: Forklift, scroll saw, lathe.
 Basic skills with 3D printing and CAD.

EXPERIENCE

RELATIVE ENTROPY MANAGING DIRECTOR | CONSULTANT

May 2018 - Present | South Africa (Nationwide)

- I joined in May 2018 as a research & engineering consultant. In July 2021 I took over the consultancy and became the sole proprietor and managing director. Current and past clients range across telecommunications, ground truthing, space mission design, academic research, and science mentoring. I am responsible for all project planning and execution, financial management, and client engagement.

SPACE GENERATION ADVISORY COUNCIL (SGAC) | VOLUNTEER

Oct 2017 - Dec 2021 | Global

- Over 4 years I have fulfilled many positions at SGAC which involved a wide variety of skills. I have managed small and large international teams in remote collaborations and in-person in Ethiopia and Dubai. Tasks completed included: speaker and sponsor engagement, developing programs and working group content, logistics, catering, event materials development, handbooks, applications and ticketing processes, multi-camera live-streaming, gala dinner management, financial management, online networking event development, and international payments and transactions.

SANSA | ANTARCTIC EXPEDITION ENGINEER/SCIENTIST

Dec 2014 - Feb 2015 | SANAE IV Research Base, Antarctica

- Summer Transition Team | Base Resupply | Science Laboratory Reorganisation
- Radar & VLF Antenna Maintenance | Magnetometer Installation & Calibration

INTERNET SOLUTIONS | BUSINESS ANALYST & PROCESS ENGINEER

Permanent Sep 2010 - Jan 2014 | Intern Mar 2010 - Aug 2010

- Systems Analysis | Process Modelling | Business Requirements
- Project Management, Technology Frameworks, & Testing Certifications
- Preceded by 7 month internship at Dimension Data in Systems Engineering

OTHER KNOWLEDGE

- Proficient in the SMAD methodology; understand high-level space systems operations, can develop and interpret mission objectives, and participate in feasibility studies.
- Practical experience in mission conceptualisation phase and Pre-Phase A study. Versed in theory of design, build, testing, integration, operation, and decommissioning phases.
- Fundamental understanding of space sub-systems design, inter-dependencies, constraints, link budgets and system trade-offs.
- Practical experience with Concurrent Design Facilities (CDFs); Deputy Manager specializing in Cost and Risk Analysis at the 2016 Space Station Design Workshop (SSDW) at the Institute of Space Systems (IRS) in Stuttgart Uni, Germany.

PERSONAL TRAITS

- Adaptable, flexible, easy-going; good teamwork & communication skills
- Leadership and management skills, as well as public speaking skills
- Seasoned in research and citations, with excellent writing skills
- Open to learning new techniques and tools, new subject matter and processes
- Able to operate at multiple levels (high-level, mid-level, detailed) as needed
- Capable of independent remote work; flexible availability and schedule
- Good interpersonal skills; experienced in international and multi-cultural collaboration
- Problem solving-oriented; able to work well in multi-disciplinary environments