



Agoritsa Spirakis

📍 Cape Town, South Africa 🌐 [agi23.github.io](https://github.com/agi23) in [agoritsa-spirakis-4b3634144](https://www.linkedin.com/in/agoritsa-spirakis-4b3634144) 📄 [Agi23](#)

Profile

Electrical and Computer Engineer with an MSc in 3D reconstruction of Antarctic sea ice using LiDAR technology. After an engaging period of interdisciplinary applied research, I am now looking to apply my software engineering skills within industry areas involving real-world systems and challenging physical problems.

Technical Skills

Programming: Python, MATLAB, C/C++, C#, Julia, Java

Robotics & Perception: ROS, LiDAR processing, point cloud analysis, 3D reconstruction

Tools: Git, Linux/Unix, LaTeX, AWS EC2, HTML/CSS

Education

MSc Eng Electrical Engineering (by dissertation), University of Cape Town 2022 – 2026

- Thesis: *3D Reconstruction of Pancake Sea Ice Floes Using LiDAR and Cameras*
- Supervisors: Robyn Verrinder & James Hepworth (references available on request)
- Affiliations: African Robotics Unit (ARU), Marine and Antarctic Research for Innovation and Sustainability (MARIS)
- Submitted in February 2026

BSc Eng Electrical and Computer Engineering (with honours), University of Cape Town 2018 – 2021

- Dean's Merit List (2018)
- Specialised in Computer Science, Embedded Systems and Network Engineering courses.
- Notable project created for Engineering Design: CR95HF NFC API for Raspberry Pi
Developed a Python API for the CR95HF NFC chip for Raspberry Pi (with a partner). This was subsequently published on PyPi. [Link to repository](#)

St Mary's DSG Pretoria, National Senior Certificate (IEB) 2013 – 2017

- 7 distinctions in IEB National Senior Certificate (English, Afrikaans, Mathematics, Life Orientation, Accounting, Information Technology, Physical Sciences)

Experience

Electrical Engineering Research Assistant, University of Cape Town 2026

- Two month contract ending 31 July 2026 focusing on further work on my MSc thesis 3D reconstruction pipeline. This involves converting the codebase from MATLAB to Python, preparing the work for a journal publication, assisting with other MARIS and ARU projects.

Teaching Assistant, University of Cape Town Feb 2023 – Jul 2023

- Led weekly practical sessions for 194 students in coursework covering STM32 C programming and digital logic implementation. This involved managing a team of tutors in assignment grading and assisting with general course administration. [Link to course repository](#).

- Academic Tutor**, University of Cape Town 2021-2023
- EEE2050F: Embedded Systems I (Head Tutor) – 2023 Semester 2
 - EEE3092F: Signals and Systems II – 2021 Semester 1
 - CSC1019F/CSC1017F: Introduction to Programming – 2021 Semester 1
- Software Development Intern**, Thinkst Canary July 2021
- Developed a Windows Service Canarytoken for canarytokens.org that triggers an alert if the service is terminated or uninstalled, with an additional option to hibernate on trigger. [Link to repository](#)
 - Developed the Windows service using C# with Python for integration and HTML/CSS for the user interface modification. Additionally expanded familiarity with Git/GitHub and Amazon EC2.

Fieldwork

- SCALE Winter 2022 Expedition**, Antarctic Marginal Ice Zone
- Collected 3D reconstructions of on-deck extracted ice floes for my MSc work.
 - Collaborated with the University of Melbourne and the University of East Anglia in capturing LiDAR data of sea ice in waves from Deck 7.
 - Collected stereo camera data of ice-tethered buoy deployments and retrievals, as well as assisting with buoy deployment operations.

Publications & Presentations

Publications

- A. Spirakis, J. Hepworth and R. Verrinder, "3D Reconstruction of Pancake Sea Ice Using Lidar and Cameras," *IGARSS 2023 - 2023 IEEE International Geoscience and Remote Sensing Symposium*, Pasadena, CA, USA, 2023, pp. 60-63, doi:10.1109/IGARSS52108.2023.10282250.
- Vichi, M. (2023) "SCALE-WIN22 Cruise Report". Zenodo. doi:10.5281/zenodo.7902557.

Conferences

- Oral presentation at the **2025 South African Nation Antarctic Programme Symposium, Kwalata Lodge, South Africa**
- Co-authored poster at **2024 International Conference on Southern Hemisphere Meteorology and Oceanography (ICSHMO), Cape Town, South Africa**. Poster presented by first author David Sephton-Poultney.
- Poster presentation at **2023 Southern Ocean Observing System (SOOS) Symposium, Tasmania, Australia**. - poster presented by my supervisor, Robyn Verrinder. I later presented this poster at the 2024 MARIS Early Career Researcher conference and won the **Best Poster** award.
- Oral presentation at the **2023 IEEE International Geoscience and Remote Sensing Symposium, Pasadena, USA**

Poles to the Promenade: SANAP Art Project

"Contours of a pancake: the ice keeps the score"

A contour map visualisation of a 3D reconstruction ice floe displayed as part of a photo series on the Seapoint Promenade for a period of 2 years.

Volunteering

- Science Expo Judge**, Eskom Science Expo, Cape Town Regionals 2022, 2023, 2025
- I volunteer at the Eskom Science Expo in Cape Town, where I am part of the Engineering category judging team. It is phenomenal engaging with young students interested in science and engineering.
- Secretary**, UCT Biomimicry Society 2019
- Biomimicry looks to nature for design inspiration when solving problems.
 - Organised society events, managed announcements for the events, and handled other society administration.