Zico da Silva · Robotics Software Engineer

PERSONAL INFORMATION

Email	zicods7@gmail.com
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LinkedIn	linkedin.com/in/zicoengineer/

GOAL

To be involved in a multi-disciplinary team that offers the chance to do research and development in areas that aim to have a positive impact on our society and the planet.

SKILLS

Software	C/C++, Python, Rust, JavaScript (NodeJS & ReactJS), Matlab, Java, SQL
Domain	Robotics, Embedded Systems, Digital Signal Processing (DSP), Estimation Theory, Computer Vision, Optimal Control
Tools	Git, SVN, Docker, Jenkins, AWS

WORK EXPERIENCE

Oct 2024–Present — Robotics Software Engineer, RoboHouse

RoboHouse

Software engineer working on robotic systems with a focus on the future of work. I've gained hands-on experience with industrial robotic arms from ABB, Universal Robots, and KUKA, as well as end-effector technologies from Schunk, Festo, and Robotiq. My current work is focused on teleoperation and robot learning for manipulation tasks, along with the development of a vision-based tactile gripper.
Location: Netherlands.

Dec 2023–Sep 2024 — Senior Software Engineer, Peralex BV

Peralex BV

Senior software engineer responsible for the development of a diverse set of DSP related products. This was a continuation from my previous employment with Intrepid Software.
Location: Netherlands.

Feb 2023–Nov 2023 — Research Assistant, African Robotics Lab

African Robotics Lab

Part-time research and development work for Dr Amir Patel, on topics closely related to my Master's thesis.
Location: **Remote from Portugal**

2016–2023 — Software and DSP Engineer, Intrepid Software (Pty) Ltd

Intrepid Software (Pty) Ltd

Lead engineer on a diverse set of projects, ranging from IoT (Internet of Things), web development, and RADAR signal processing. Experienced in developing client-server architectures that integrate high-performance data processing systems (C++ Linux system), together with browser-based data visualisation dashboards.
Location: **South Africa/Remote from Portugal**

EDUCATION

2021-2023 — University of Cape Town

Masters of Science, Remote from Portugal

Passed with Distinction · Department: Electrical Engineering
Thesis: *Monocular 3D Reconstruction of Cheetahs in the Wild*
Description: This project explored the use of monocular video to obtain accurate 3D kinematics of the cheetah in its natural habitat.
Location: **Remote from Portugal**
Supervisors: Dr Amir Patel & Dr Fred Nicolls

2012-2015 — University of Cape Town

Bachelor of Science, South Africa

First Class Honours · *Computer and Electrical Engineering* · Department: Electrical Engineering
Final year thesis: Simultaneous Localisation and Mapping (SLAM) for underground robots with the Kinect camera using computer vision techniques.
Location: **South Africa**

PUBLICATIONS

October 2022 — Improving 3D Markerless Pose Estimation of Animals in the Wild using Low-Cost Cameras

2022 IROS

Tracking the 3D motion of agile animals in the wild will enable new insight into the design of robotic controllers. However, in-field 3D pose estimation of high-speed wildlife such as cheetahs is still a challenge. In this work, we aim to solve two of these challenges: unnatural pose estimates during highly occluded sequences and synchronisation error between multi-view data.

April 2023 — Chasing the cheetah: how field biomechanics has evolved to keep up with the fastest land animal

JEB

This article uses cheetah motion research as a basis to review the past, present and likely future of field biomechanics.

May 2024 — Markerless 3D kinematics and force estimation in cheetahs

Scientific Reports

We use data obtained from cheetahs in the wild to present a trajectory optimisation approach for estimating the 3D kinematics and joint torques of subjects remotely.

October 2024 — Monocular 3D Reconstruction of Cheetahs in the Wild

2024 IROS

This paper introduces a framework for monocular 3D reconstruction of cheetah movements, leveraging a combination of data-driven and physics-based modelling as well as trajectory optimization.

OTHER INFORMATION

Languages

English · C2 (native)

Portuguese · A2

Interests

Music · Football · Dancing