AIMS | African Institute for Mathematical Sciences SOUTH AFRICA

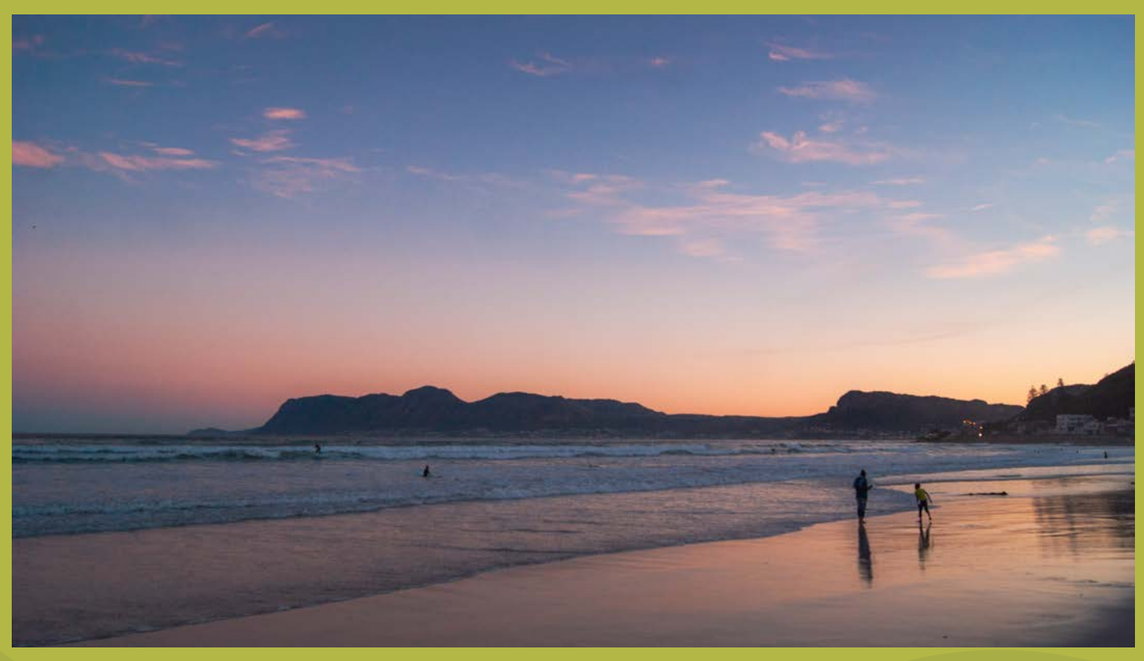
UNIVERSITEIT STELLENBOSCH UNIVERSITY

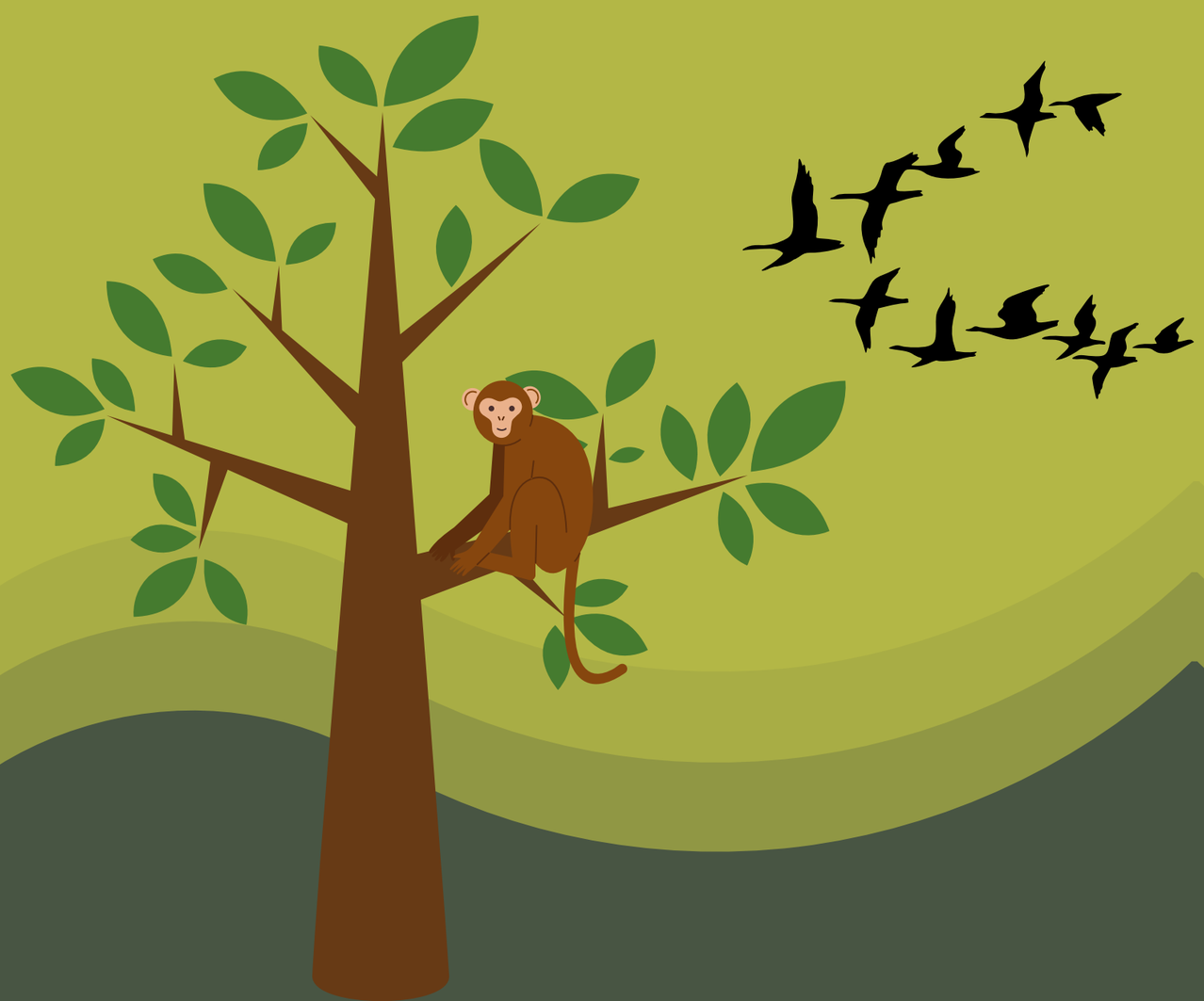
POSTDOCTORAL RESEARCH FELLOWSHIP (2 YEARS IN CAPE TOWN, SOUTH AFRICA)

MACHINE LEARNING FOR ECOLOGY

A recent report issued by the WWF states that there has been a catastrophic decline in wildlife population in recent years. A large number of species are threatened with extinction due to a number of factors. Certain species have been placed on the IUCN Red List for several years, but further conservation efforts are still urgently required to ensure the survival of the remaining individuals. The African Institute for Mathematical Sciences (AIMS) and Stellenbosch University are looking to appoint a post-doctoral fellow to work in the area of machine learning for ecology. The fellow will work as part of a collaborative team of local, national, and international researchers to address important issues in the area of machine learning for ecology.

This fellowship aims at investigating machine learning models for passive acoustic monitoring of calling species and will also explore object detection techniques for computer vision problems. The data will be audio, image, or video - classification or detection problems.
The fellow will research state-of-the-art techniques in machine learning. The fellow with work closely with Dr. Emmanuel Dufourq who will be the host for this position. The fellow will work at AIMS which is located in the beautiful city of Muizenberg, Cape Town, South Africa, and will also work at Stellenbosch University in a collaborative manner.





Core Responsibilities:

- Review necessary and related literature in machine learning for ecology. Discuss, share, and write relevant literature reviews.
- Participate fully in the project including research design, data analysis, and data annotation (if need be).
- Assume the responsibility for implementing deep learning models for ecological problems.
- Contribute towards peer-reviewed research articles and academic talks.
- Actively and frequently participate in research meetings to discuss and share knowledge.
- Take initiative to grow the collaborative network, host workshops, participate in research talks and initiate new projects from their own initiative.
- Co-supervise students in the area of machine learning for ecology.
- Seek grants when required for cloud computation.

Requirements:

- Ph.D. in a relevant mathematical science (e.g. computer science, mathematics, statistics...).
- Very strong experience in deep learning (Tensorflow 2 preferably, other libraries welcome too).
- Very strong Python programming skills, with good programming practices.
- A desire to apply machine learning to ecological problems (audio, image, or video).
- Proven ability to publish in peer-reviewed journals.
- Be independent and driven for academic outcomes.
- The desire to share knowledge and work in a collaborative and respectful manner.
- Strong communication skills (written, oral, and presentation).
- The successful candidate will be expected to publish at least one journal article in an accredited journal of high standing during each year of the fellowship tenure.

Value of award:

The fellowship is valued at R325,000 per annum with a once-off allowance of R50,000 during the first year, towards scientific activities (hardware/software/workshop attendance/travel to Cape Town). No further benefits are provided. The award is compliant with the SARS rules for tax exemption and is tenable for two years, subject to submission of a satisfactory progress report and the availability of funds. The position is immediately available.

Application deadline: 17th October 2021

Applications must include a complete CV, proof of Ph.D. completion, a covering letter detailing the candidate's experience (especially in deep learning for computer vision or audio), availability to start, and interest in machine learning for ecology. In addition, applications must include the names and complete contact details of at least two academic references who have, taught, supervised, or worked alongside the applicant. Send your application as a single PDF file to dufourq@aims.ac.za on or before the deadline. Shortlisted candidates will be contacted for an online interview.

Contact Dr. Emmanuel Dufourq (dufourq@aims.ac.za) for details regarding this position.

DISCLAIMER: AIMS South Africa reserves the right to disqualify ineligible, incomplete and/or inappropriate applications. AIMS also reserves the right not to make an appointment to the position as advertised or to extend the deadline for applications. Only successful applicants will be contacted.