rafael.**felix**

phd, computer vision researcher

about

North Terrace
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Australia

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in:rfelixmg
github: rfelixmg

languages

native portuguese
english & spanish
fluent
mandarin – *learning*

programming

Python, C/C++
pytorch
tensorflow
Matlab, Java
numpy, sklearn,
GitHub
OpenCV

data mining

Computer Vision,
Machine Learning,
Deep Learning,
Neural Nets, SVMs,
Gaussian Processes

technology

hadoop (basic),
netbeans, pycharm
sublime, BigQuery

interests

My research interests include deep learning combining vision and language for explainable artificial intelligence.

keywords*: computer vision, vision+language, deep learning, open-set recognition, {*}-shot learning (GZSL), transfer learning, domain adaptation, adversarial learning*

publications

2019 **Generalised Zero-shot Learning with Multi-modal Embedding Spaces** In submission
Felix, Rafael and Harwood B. and Sasdelli, M. and Reid, I. and Carneiro, G.

2019 **GZSL with Domain Classification in a Joint Semantic and Visual Space** DICTA 2019
Felix, Rafael and Harwood B. and Sasdelli, M. and Reid, I. and Carneiro, G.

2019 **Augmentation Network for GZSL with Multi-Modal Inference** In submission
Felix, Rafael and Sasdelli, M. and Reid, I. and Carneiro, G.

2018 **Multi-modal Cycle-Consistent Generalized Zero-Shot Learning.** ECCV
github/rfelixmg/frwgan-eccv18
Felix, Rafael and Kumar, BG Vijay and Reid, Ian and Carneiro, Gustavo

2015 **Thresholding the Courtesy Amount of Brazilian Bank Checks Using a Local Methodology.** PAAMS
Felix, Rafael, Leandro Augusto da Silva, and Leandro Nunes de Castro

experience

since 12/19 **Australian Institute for Machine Learning** Post-Doc Researcher
Explainable Artificial Intelligence and Visual Question Answering.

2016-2019 **Australian Centre for Robotic Vision** PhD Researcher.
Visual Learning.

2017-2019 **The University of Adelaide** C/Lecturer.
P/T Lecturer on Foundations of Computer Science.

01–06, 2016 **Instituto Eldorado, Brazil** ML-Analyst
Outsourced for Motorola BR.
Machine Learning for Mobile Applications.

04–12, 2015 **upLexis** ML-Developer.
Machine Learning for WebCrawling.

2013–2015 **Sincronica** M.Sc. Researcher.
Image Processing & Machine Learning for Document Analysis.

education

2016-2019 **Ph.D.** in Computer Science — The University of Adelaide
Deep Learning for Zero-shot Learning.

2013–2015 **M.Sc.** in Electrical and Computer Engineering — Uni. Presbiteriana Mackenzie
Majoring in Computer Engineering
Specialization in Image Processing & Machine Learning

2008-2011 **B.Sc.** in Information Systems — Unimontes
Majoring in Information Systems/Computer Science

awards and scholarships

2020 **Dean's Commendation for doctoral thesis excellence**

2016-2020 **Australian Research Council**
PhD Scholarship

2018 **Robotic Vision Symposion 2018**
Best poster award for Multi-modal Cycle-consistent Generalized Zero-Shot Learning

2017 **Ingenuity 2017 - Faculty of ECMS, The University of Adelaide** 3rd position
Prize for The chessboard project as supervisor

2017 **Thee Minutes Thesis - Faculty of ECMS, The University of Adelaide**
People's choice award

2013-2015 **Brazilian Federal Agency for Coordination of Improvement of Higher Education Personnel**
M.Sc. Scholarship

projects

since 2020 **Visual Questions Answering for Remote Sensing data** — AIML
The presence of remote sensing data is more often present in our lives, such as online maps, and satellite images. This project aims to guide machines to learn answering questions based on these large scale data sources.

2016-2020 **Visual Learning** — ACRV
This project addresses important challenges in deep learning, such as: effective transfer learning, role of probabilistic graphical models in deep learning, efficient training and inference algorithms, etc

2017 **The Automatic Chess Board** — ACRV
This project addresses the creation of a low-cost (under USD $600), yet responsive automatic chess board. In this project the system detects and respond to the movement of the user, by using computer vision techniques rather than a computer interface.

2014-2015 **Automated processing of bank check images for OCR** — Sincronica
The project has two main contributions: the creation of a novel dataset of bank check images; and a novel method for processing bank check images.

2013-2015 **Document Classification and Quality Assessment** — Sincronica
The project aimed at developing a classification pipeline for scanned images of documents, that included novel class detection.

biography

I am currently a Post-Doc Fellow at the Australian Institute for Machine Learning (AIML). Recently, I have been developing application on Generalised Zero-Shot Learning (GZSL), Explainable Artificial Intelligence and Visual Question Answering (VQA).

I completed my PhD studies at The University of Adelaide (UoA), Australia, under the supervision of Prof. Gustavo Carneiro, Dr. Michele Sasdelli, and Prof. Ian Reid, with a prestigious scholarship from Australian Research Council. Previously, I have industry experience. In my first position, I developed machine learning applications for acquiring data from online sources. Secondly, I was a data scientist at a Motorola outsource company working on machine learning for mobile platforms. I received my M.Sc. from Universidade Mackenzie, where I worked with Prof. L. de Castro, with a prestigious scholarship from the federal agency *CAPES*. In my master degree, I focused on Neural Networks and their use for image processing on scanned documents, and their intersection with natural language processing. Over the course of my M.Sc., I worked on parallel projects using machine learning to develop applications for scanned documents.

On my free time, I enjoy tackling quick projects like programming affordable drones, and small robots.