



Ricardo Pereira de Magalhães Cruz

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My PhD topic is on using deep learning for computer vision. I use TensorFlow and PyTorch, and I have several fundamental publications on the area. I have been teacher assistant at FEUP, teaching Python, C and C++. I have participated in several projects working on web development (flask), databases (mongo, postgres), multimedia (sdl, gtk, qt) and others.

[-] Education

- **(2021)** PhD in Computer Science (currently waiting for defense!)
co-joint University of Porto, Minho and Aveiro
- **2015** MSc in Applied Mathematics (Grade=18/20)
Faculty of Sciences, University of Porto
- **2012** BSc in Computer Science (Grade=16/20)
Faculty of Sciences, University of Porto

[-] Career

- **2018-2021** Teacher Assistant (Python and C/C++)
Faculty of Engineering, University of Porto
- **2016-2020** PhD Grant (deep learning and computer vision)
INESC TEC
- **2015** Research Grant (machine learning)
INESC TEC
- **2014** Research Grant (epidemiology modelling)
Mathematics Center of the University of Porto
- **2007** Google Grant: Summer of Code (dynamic layouts)
OpenOffice.org
- **2006** Google Grant: Summer of Code (YaST GTK port)
Novell / openSUSE

[-] Awards

- **2020** Best Oral Presentation: Training Convolutional Neural Networks to be Background Invariant
RECPAD 2020 conference
- **2021** Pedagogical Recognition Award
Faculty of Engineering, University of Porto
- **2021** Sustainable Ideas
Faculty of Engineering, University of Porto

☐ Publications

- **2021** Background Invariance by Adversarial Learning
R. Cruz, R. Prates, E. Filho, J. Costa, J. Cardoso
25th International Conference on Pattern Recognition (ICPR), IEEE
- **2019** Automatic Augmentation by Hill Climbing
R. Cruz, J. Costa, J. Cardoso
28th International Conference on Artificial Neural Networks (ICANN), Springer
- **2019** Averse Deep Semantic Segmentation
R. Cruz, J. Costa, J. Cardoso
41st Engineering in Medicine and Biology Conference (EMBC), IEEE
- **2019** Insulator visual non-conformity detection in overhead power distribution lines using deep learning
R. Prates, R. Cruz, A. Marotta, R. Ramos, E. Filho, J. Cardoso
Journal Computers & Electrical Engineering, Springer
- **2018** A Class Imbalance Ordinal Method for Alzheimer's Disease Classification
R. Cruz, M. Silveira, J. Cardoso
2018 International Workshop on Pattern Recognition in Neuroimaging (PRNI), IEEE
- **2018** Binary ranking for ordinal class imbalance
R. Cruz, K. Fernandes, J. Costa, M. Pérez Ortiz, J. Cardoso
Journal Pattern Analysis and Applications, Springer
- **2018** Deep image segmentation by quality inference
K. Fernandes, R. Cruz, J. Cardoso
International Joint Conference on Neural Networks (IJCNN), IEEE
- **2017** Constraining type II error: building intentionally biased classifiers
R. Cruz, K. Fernandes, J. Costa, J. Cardoso
International Work-conference on Artificial Neural Networks (IWANN), Springer
- **2017** Fine-to-coarse ranking in ordinal and imbalanced domains: an application to liver transplantation
M. Pérez-Ortiz, K. Fernandes, R. Cruz, J. Cardoso
International Work-conference on Artificial Neural Networks (IWANN), Springer
- **2017** Combining ranking with traditional methods for ordinal class imbalance
R. Cruz, K. Fernandes, J. Costa, M. Pérez-Ortiz, J. Cardoso
International Work-conference on Artificial Neural Networks (IWANN), Springer
- **2017** Ordinal class imbalance with ranking
R. Cruz, K. Fernandes, J. Costa, M. Pérez-Ortiz, J. Cardoso
Iberian conference on pattern recognition and image analysis (Ibipria), Springer
- **2016** Tackling class imbalance with ranking
R. Cruz, K. Fernandes, J. Costa, J. Cardoso
International Joint Conference on Neural Networks (IJCNN), IEEE