Ricardo Pereira de Magalhães Cruz

✉ ricardo.pdm.cruz@gmail.com
⌂ https://rpmcruz.github.io
(+351)934741617 ● Valongo, Portugal

For the last five years, I have been working as a machine learning researcher at INESC TEC. I have just finished my Ph.D. thesis which I will defend very soon. Meanwhile, I have also been working at FEUP as a teacher assistant (TA): teaching Python and C++. As a machine learning researcher, I have worked mostly on deep learning applied to computer vision, using both TensorFlow and PyTorch. In the past, I have participated in many open-source projects and also did much consulting work: on web development (flask), databases (mongo, postgres), multimedia (sdl, gtk, qt), server administration (hpc) and others. In terms of education, I am about to finish my Ph.D. in computer science. I have a masters in applied mathematics and a bachelors in computer science.

⊟ 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

⊟ Other related work

- **2018-2020**   Consulting for a geography team at FLUP
  In total, I have done seven scraping and automation jobs.
- **2018-2019**   Mentor at Coursera
  Andrew Ng's course on Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization
- **2014**   Consulting at Flykt
  Search algorithms for travel destinations.

⊟ 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**   Ordinal Losses for Classification of Cervical Cancer Risk [accepted]
           T. Albuquerque, R. Cruz, J. Cardoso
           PeerJ Computer Science

├─ **2021**   Background Invariance by Adversarial Learning [accepted]
           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 (Ibpria),
           Springer

└─ **2016**   Tackling class imbalance with ranking
           R. Cruz, K. Fernandes, J. Costa, J. Cardoso
           International Joint Conference on Neural Networks (IJCNN), IEEE

Recommendation contacts will be provided upon request.
Consult my github for more projects: https://github.com/rpmcruz.