Pedro Morgado

Curriculum Vitae

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Research Interests

Computer Vision & Deep Learning.

Transfer learning (zero-shot and low-shot learning).

Neural architecture search (task-specific architectures and differentiable search).

Multi-task learning (life-long learning, multi-task network design).

Multi-modal representations (audio/visual/text embeddings).

Education

2015–Now **PhD student, Electrical and Computer Eng.**, *University of California*, San Diego.
Statistical Visual Computing Lab.
Advisor: Prof. Nuno Vasconcelos.
Expected graduation date: June 2021.

2011–2012 **MSc, Electrical and Computer Eng.**, *Instituto Superior Técnico*, Lisbon, Portugal.
Advisors: Prof. Margarida Silveira & Prof. Jorge S. Marques
Thesis: "*Automated Diagnosis of Alzheimer's Disease using PET Images.*"

2008–2011 **BSc, Electrical and Computer Eng.**, *Instituto Superior Técnico*, Lisbon, Portugal.

2007–2008 **Aerospace Eng.**, *Instituto Superior Técnico*, Lisbon, Portugal.

Work Experience

2015–Now **Research Assistant, Statistical Visual Computing Lab (SVCL)**, *Dept. Electrical and Computer Engineering, University of California*, San Diego.
- Multi-modal self-supervision.
- Transfer learning, few-shot and zero-shot learning.
- Scalable image retrieval.
- Image semantics for zero-shot learning (boosting and CNN architectures).

Summer 2019 **Research Intern, Facebook AI Research**, New York, NY.
- Audio-visual correspondence as a source of self-supervision for visual representation learning.

Summer 2017 **Research Intern, Adobe Research**, Seattle, WA.
- Spatial audio generation conditioned on 360 video.

2012–2014 **Research Assistant, Signal and Image Processing Group (SIPG)**, *Institute for Systems and Robotics*, Lisbon, Portugal.
- Longitudinal co-registration of multiple imaging modalities.
- Feature extraction and selection for Alzheirmer's disease (AD) diagnosis.
- Classification of AD, Mild Cognitive Impairment (MCI), and MCI to AD conversion.

Teaching Experience

Spring 2019 **ECE 271C - Statistical Learning III**, *Teaching Assistant*, UCSD.

Winter 2019 **ECE 271B - Statistical Learning II**, *Teaching Assistant*, UCSD.

Spring 2016 **ECE 161C - Digital Signal Processing II**, *Teaching Assistant*, UCSD.

Refereed Conference & Journal Publications

Preprint Learning Audio-Visual Representations by Cross-Modal Agreement.
P Morgado, N Vasconcelos and I Misra.
arXiv:2004.12943, 2020.

2020 Learning Representations from Audio-Visual Spatial Alignment.
P Morgado, Y Li, N Vasconcelos.
Neural Information Processing Systems (NeurIPS), 2020.

Deep Hashing with Hash-Consistent Large Margin Proxy Embeddings.
P Morgado, Y Li, N Vasconcelos.
International Journal on Computer Vision (IJCV), 2020.

Solving Long-tailed Recognition with Deep Realistic Taxonomic Classifier.
TY Wu, **P Morgado**, P Wang, CH Ho, N Vasconcelos.
European Conference on Computer Vision (ECCV), 2020.

2019 NetTailor: Tuning the architecture, not just the weights.
P Morgado and N Vasconcelos.
Conference on Computer Vision and Pattern Recognition (CVPR), Long Beach, 2019.

PIEs: Pose Invariant Embeddings.
Chih-Hui Ho, **P Morgado** and N Vasconcelos.
Conference on Computer Vision and Pattern Recognition (CVPR), Long Beach, 2019.

2018 Self-Supervised Generation of Spatial Audio for 360 Video.
P Morgado, N Vasconcelos, T Langlois, and O Wang.
Neural Information Processing Systems (NeurIPS), Montreal, 2018.

2017 Semantically Consistent Regularization for Zero-Shot Recognition.
P Morgado, and N Vasconcelos.
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2017.

2015 Minimal neighborhood redundancy maximal relevance: Application to the diagnosis of Alzheimer's disease.
P Morgado, and M Silveira.
Neurocomputing, 2015.

Predicting conversion from MCI to AD with FDG-PET brain images at different prodromal stages.
C Cabral, **P Morgado**, DC Costa, and M Silveira.
Computers in Biology and Medicine, 2015.

2013 Texton-based diagnosis of Alzheimer's disease.
P Morgado, M Silveira, and DC Costa.
International Workshop on Machine Learning for Signal Processing (MLSP) 2013.

Diagnosis of Alzheimer's disease using 3D Local Binary Patterns.
P Morgado, M Silveira, and JS Marques.
Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization, 2013.

Extending Local Binary Patterns to 3D for the diagnosis of Alzheimer's disease.
P Morgado, M Silveira, and JS Marques.
International Symposium on Biomedical Imaging (ISBI) 2013.

Efficient selection of non-redundant features for the diagnosis of Alzheimer's disease.
P Morgado, M Silveira, and JS Marques
International Symposium on Biomedical Imaging (ISBI) 2013.

Awards and recognitions

Reviewer recognition. Outstanding reviewer for ICCV'17. Top reviewer for NIPS'19.

2015 **FCT Graduate Fellowship**. Four year fellowship for full-time doctoral studies awarded by the Portuguese Ministry of Sciences, Technology and Education.

2014 **UCSD Graduate Fellowship**, Electrical and Computer Eng. departmental fellowship for the academic year of 2014-2015.

2013 **Research Grant**, Portuguese Ministry of Sciences, Technology and Education.

2012 **Scientific Initiation Grant**, Portuguese Ministry of Sciences, Technology and Education.

Community service

Reviewing 🏆 ICCV'17, ICCV'19, 🏆 NeurIPS'19, ICASSP'20, CVPR'20, NeurIPS'20.
TPAMI, TBigData.

Mentoring Summer Research Internship Program 2018 & 2019 (Mentored 8 UCSD undergraduate and graduate students on research projects.)