

# Pedro Morgado

## Curriculum Vitae

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📄 <https://pedro-morgado.github.io>

### Research Interests

**Computer Vision** (recognition, detection, semantic segmentation).

**Deep Learning** (network distillation, binarization and cascades).

**Transfer learning** (zero-shot, low-shot and transfer learning).

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

**Multimodal representations** (audio/visual/text embeddings).

### Education

2014–Now **PhD student, Electrical and Computer Eng.**, *University of California*, San Diego.

Specialization: Intelligent Systems, Robotics, and Control.

Statistical Visual Computing Lab.

Advisor: Prof. Nuno Vasconcelos.

2011–2012 **MSc, Electrical and Computer Eng.**, *Instituto Superior Técnico*, Lisbon, Portugal.

Specializations (Major/Minor): Systems, Decision and Control / Computers.

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.

### Research Experience

2015–Now **Statistical Visual Computing Lab (SVCL)**, *Dept. Electrical and Computer Engineering, University of California*, San Diego.

- Transfer learning
- Image semantics for zero-shot learning (boosting and CNN architectures).
- Image retrieval and hashing.
- Attention mechanisms for Visual QA.

2017 **Adobe Research**, Seattle, WA.

- Sound generation conditioned on video (deep learning based generation).

2012–2014 **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 Alzheimer's disease (AD) diagnosis.
- Classification of AD, Mild Cognitive Impairment (MCI), and MCI to AD conversion.

## Teaching Experience

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

## Publications

- 2018 Self-Supervised Generation of Spatial Audio for 360 Video.  
**P Morgado**, N Vasconcelos, T Langlois, and O Wang.  
Neural Information Processing Systems (NIPS), 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.
- 2016 Mining big data sets of plankton images: a zero-shot learning approach to retrieve labels without training data.  
E Orenstein, **P Morgado**, E Peacock, H Sosik, and J Jaffe.  
American Geophysical Union, Ocean Sciences Meeting, 2016.
- 2015 Minimal neighborhood redundancy maximal relevance: Application to the diagnosis of Alzheimer's disease.  
**P Morgado**, and M Silveira.  
Neurocomputing, 2015.
- 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.
- 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.
- 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.
- 2013 *(Oral) 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.
- 2013 3D Texture Analysis using Local Binary Patterns.  
**P Morgado**, M Silveira and JS Marques.  
Portuguese Conference on Pattern Recognition (RecPad) 2013.

## █ Awards and honors

- 2015 **FCT Graduate Fellowship**. Four year fellowship for full-time doctoral studies awarded by the Ministry of Sciences, Technology and Education (Portugal).
- 2014 **UCSD Graduate Fellowship**, Electrical and Computer Eng. departmental fellowship for the academic year of 2014-2015.
- 2013 **Research Grant**, Ministry of Sciences, Technology and Education.
- 2012 **Scientific Initiation Grant**, Ministry of Sciences, Technology and Education.

## █ Community service

- Reviewer
  - o ICCV'17 (Outstanding reviewer)
  - o TPAMI

## █ Computer skills

Programming PyTorch, Tensorflow, Caffe, Keras, Python, Matlab, Bash, GIT  
Familiar with Java, C/C++, HTML/CSS, JavaScript, VBA