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Experience

- **University of California at Berkeley**—Berkeley, USA
Post-Doctoral Scholar, January 2014 – present.
 - Working on 3D Reconstruction in Prof. Jitendra Malik's group.
- **University of Coimbra**—Coimbra, Portugal
PostDoc, January 2012 – present.
 - Worked on FCT-funded project "DG2CVPR: Differential Geometry for Computer Vision and Pattern Recognition" - PTDC/EEA-CRO/122812/2010, in Prof. Jorge Batista's group.
- **University of Bonn**—Bonn, Germany
PhD student, January 2008 – December 2011.
 - Worked on image segmentation and visual recognition in Prof. Cristian Sminchisescu's group, within project "HUMOREV: Human Modeling, Reconstruction and Recognition in Video", funded by Marie Curie Excellence Grant 25481.
- **University of Coimbra**—Coimbra, Portugal
Research assistant, January 2006 – December 2007.
 - Developed a vision-based tabletop interface with Prof. Paulo Peixoto, for collaborative interaction scenarios, in the context of FCT-funded project "HCOGICOS: Human Computer Gesture Interfaces for Collaborative Scenarios" - POSC/EEA-SRI/61451/2004. See media coverage in:
<http://hcogicos.isr.uc.pt/news.php>
- **Critical Software**—Coimbra, Portugal
Intern, October 2005 – January 2006
 - Developed the prototype of a satellite's data handling system, a simulation of its hardware and the software for the ground command center, to be used in a joint case study with NASA.
- **University of Coimbra**—Coimbra, Portugal
Research assistant, September 2003 – March 2004.
 - Integrated and implemented software for a surveillance application using active computer vision, in a partnership between the University of Coimbra (with Profs. Jorge Batista and Paulo Peixoto) and the spanish company Visual Tools. As a result of this project a prototype was presented at an international surveillance exhibition in Madrid.

Academic Degrees

- **University of Bonn**—Bonn, Germany
PhD in Informatik

- Advisor: Prof. Cristian Sminchisescu
- Thesis: *Bottom-up Object Segmentation for Visual Recognition*
- Thesis Defense Date: 19-12-2012. Started in January 2008.
- **University of Coimbra**—Coimbra, Portugal
Licenciatura in Electrotechnical and Computer Engineering (equivalent to an integrated master's degree, after the Bologna Treaty).
 - Thesis: *A Vision-Based Gestural Interface for Local Collaboration Environments*
 - Thesis Advisor: Prof. Paulo Peixoto
 - Period: from September 2000 to September 2005

Journal Publications

- J. Carreira*, S. Vicente*, L. Agapito and J. Batista. Lifting Object Detection Datasets into 3D. IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI) invited paper for special issue of CVPR 2014. To appear, 2015. (* first two authors contributed equally)
- J. Carreira, R. Caseiro, J. Batista and C. Sminchisescu. Free-Form Region Description with Second-Order Pooling. IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), July 2015.
- A. Ion, J. Carreira and C. Sminchisescu, Probabilistic Joint Image Segmentation and Labeling via Figure-Ground Composition. International Journal of Computer Vision (IJCV), March 2014.
- J. Carreira and C. Sminchisescu. CPMC: Constrained Parametric Min-Cuts for Automatic Object Segmentation. IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), July 2012.
- J. Carreira*, F. Li* and C. Sminchisescu, Object Recognition by Sequential Figure-Ground Ranking. International Journal of Computer Vision (IJCV), July 2012. (* first two authors contributed equally)

Conference Publications

- J. Carreira, A. Kar, S. Tulsiani and J. Malik. Virtual View Networks for Object Reconstruction. CVPR 2015. Poster presentation, acceptance rate 28.3%.
- A. Kar*, S. Tulsiani*, J. Carreira and J. Malik. Category-Specific Object Reconstruction from a Single Image. CVPR 2015. **Oral presentation, acceptance rate 3.3%. Best student paper award.** (first two authors contributed equally)
- C. Premebida, J. Carreira, J. Batista and U. Nunes. Pedestrian Detection Combining RGB and Dense Lidar Data. IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2014.
- S. Vicente*, J. Carreira*, L. Agapito and J. Batista. Reconstructing PASCAL VOC. International Conference on Computer Vision and Pattern Recognition (CVPR) 2014. **Oral presentation, acceptance rate 5.75%** (* first two authors contributed equally)

- C. Ionescu, J. Carreira and C. Sminchisescu. Iterated Second-Order Label Sensitive Pooling for 3D Human Pose Estimation. International Conference on Computer Vision and Pattern Recognition (CVPR) 2014. **Oral presentation, acceptance rate 5.75%**
- J. F. Henriques, J. Carreira, R. Caseiro and J. Batista. Beyond Hard Negative Mining: Efficient Detector Learning via Block-Circulant Decomposition. International Conference on Computer Vision (ICCV), December 2013. **Oral presentation, acceptance rate 2.5%**
- F. Li, J. Carreira, G. Lebanon and C. Sminchisescu. Composite Statistical Inference for Semantic Segmentation. In IEEE Conference on Computer Vision and Pattern Recognition (CVPR), June 2013. Poster presentation, acceptance rate 25.2%
- J. Carreira, R. Caseiro, J. Batista and C. Sminchisescu. Semantic Segmentation with Second-Order Pooling. European Conference on Computer Vision (ECCV), October 2012. **Oral presentation, acceptance rate 2.8%**
- A. Ion, J. Carreira, and C. Sminchisescu. Probabilistic Image Segmentation and Labeling. In Advances in Neural Information Processing Systems (NIPS) 2011, December 2011. **Spotlight presentation, acceptance rate 4.7%.**
- A. Ion, J. Carreira, and C. Sminchisescu. Image Segmentation by Figure-Ground Composition into Maximal Cliques. In IEEE International Conference on Computer Vision (ICCV), November 2011. Poster presentation, acceptance rate 24%.
- J. Carreira and C. Sminchisescu. Constrained Parametric Min-Cuts for Automatic Object Segmentation. In IEEE International Conference on Computer Vision and Pattern Recognition (CVPR), June 2010. Poster presentation, acceptance rate 22.3%.
- F. Li*, J. Carreira*, and C. Sminchisescu. Object Recognition as Ranking Holistic Figure-Ground Hypotheses. In IEEE International Conference on Computer Vision and Pattern Recognition (CVPR), June 2010. Poster presentation, acceptance rate 22.3%. (* first two authors contributed equally)
- J. Carreira and P. Peixoto. Retrieving and Exploiting Hand's Orientation in Tabletop Interaction. IEEE International Conference on Multimedia & Expo, July 2007, Beijing, People's Republic of China.
- J. Carreira and P. Peixoto. A Vision Based Interface for Local Collaborative Music Synthesis. Proceedings of the IEEE Automatic Face and Gesture Recognition Conference, April 2006, Southampton, UK.

Workshop papers

- F. Li, J. Carreira, G. Lebanon and C. Sminchisescu. CSI: Composite Statistical Inference Techniques for Semantic Segmentation. ICML 2013 Workshop on Infering: Interactions between Inference and Learning. Atlanta, USA, June 2013. Oral presentation, acceptance rate 30%.
- J. Carreira and P. Peixoto. Nuisance Free Recognition of Hand Postures over a Tabletop Display. HCSNet Workshop on the use of Vision in HCI (VisHCI 2006). Canberra, Australia, November 2006.

Extended abstracts

- S. Vicente*, J. Carreira*, L. Agapito and J. Batista. Reconstructing PASCAL VOC. Scene Understanding Workshop (SUNw) at CVPR 2014. (* first two authors contributed equally)
- P. Cardoso, R. Carvalho, J. Carreira and J. Batista. Automation of Species Identification and Description. Portuguese Conference on Artificial Intelligence (EPIA). Angra do Heroismo, Acores, September 2013.
- J. Carreira, F. Li, and C. Sminchisescu. Object Recognition by Ranking Figure-Ground Hypotheses. The Learning Workshop. Snowbird, Utah, April 2010.

Technical reports

- J. Carreira, P. Agrawal, K. Fragkadiaki and J. Malik. Human Pose Estimation with Iterative Error Feedback. arXiv, July 2015.
- P. Agrawal, J. Carreira and J. Malik. Learning to See by Moving. arXiv, May 2015.
- S. Tulsiani, J. Carreira and J. Malik. Pose Induction for Novel Object Categories. arXiv, May 2015.
- F. Li, J. Carreira, G. Lebanon, C. Sminchisescu. Composite Statistical Inference for Semantic Segmentation. July 2013.
- J. Carreira, A. Ion, and C. Sminchisescu. Image Segmentation by Discounted Cumulative Ranking on Maximal Cliques. Technical Report 06-2010 (arXiv:1009.4823), Computer Vision and Machine Learning Group, Institute for Numerical Simulation, University of Bonn, June 2010.

Invited Talks

- Keynote Speaker at SIBGRAPI 2015, 26th of August, Salvador, Brazil.
- CVPR, 24th of June 2014. "Reconstructing PASCAL VOC".
- UC Berkeley, 12th of February 2014. "Semantic Segmentation with Second-Order Pooling".
- UC Berkeley, 31st of January 2014. "Reconstructing PASCAL VOC".
- Geometric Methods for Computer Vision and Control, Wuerzburg, 16th of November 2013. "Semantic Segmentation with Second-Order Pooling".
- European Conference on Computer Vision, Florence, 12th of October 2012. "Semantic Segmentation with Second-Order Pooling". Video online at http://videlectures.net/eccv2012_carreira_semantic/
- Pascal VOC Workshop, Barcelona, 7th of November 2011. "Object Recognition by Sequential CPMC Segment Ranking".
- ISR-Coimbra, 13th of April 2011, "Ranking Object Hypothesis for Recognition and Segmentation".
- Pascal VOC Workshop, Kyoto, 3rd of October 2009. "Ranking Figure-Ground Hypotheses for Object Segmentation".
- ISR-Coimbra, 16th of July 2008. "Graph-based Methods for Image Segmentation".

- HCSNet Workshop on the Use of Vision in Human-Computer Interaction, Canberra, 3rd of November 2006. "Nuisance Free Recognition of Hand Postures over a Tabletop Display".

Teaching

- VISion Understanding and Machine intelligence Summer School, July 2014, Porto, Portugal. "Image Segmentation" tutorial, with Cristian Sminchisescu.

Event Organization

- First International Workshop on 3D from a Single Image, at CVPR 2015, organized with Sara Vicente (Anthropics Technology), Hao Su (Stanford) and Niloy Mitra (University College London).

Publicly Released Software

- Carvi, release 1. Publicly available since March 2014.
- Semantic Segmentation with Second-Order Pooling, release 1. Publicly available since October 2012.
- Constrained Parametric Min-Cuts for Automatic Object Segmentation, release 1. Publicly available since October 2010.

Patents

- Second-Order Pooling Method for Semantic Segmentation. United States Patent Application 20150104102. Publication Date 04/16/2015. Filing Date 10/11/2013.

Professional Activities

- Reviewer for IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), International Journal of Computer Vision (IJCV), IEEE Transactions on Image Processing (TIP), Computer Vision and Image Understanding (CVIU), Pattern Recognition (PR), Pattern Recognition Letters (PRL), International Journal of Computer Mathematics (IJCM), IEEE Journal of Biomedical and Health Informatics (JBHI), IEEE Transactions on Circuits and Systems for Video Technology (TCSVT), IET Computer Vision, Journal of Electronic Imaging (JEI).

Program Committee

- International Conference on Computer Vision and Pattern Recognition (CVPR) 2013, 2014, 2015.
- International Conference on Computer Vision (ICCV) 2013, 2015.
- European Conference on Computer Vision (ECCV) 2012, 2014.
- International Conference on Machine Learning (ICML) 2015.
- Neural Information Processing Systems (NIPS) 2015.

- SIGGRAPH 2015.
- British Machine Vision Conference 2015.
- Asian Conference on Computer Vision (ACCV) 2012, 2014.
- International Conference on Robotics and Automation (ICRA) 2015.
- International Conference on Robotics and Automation (ICRA) 2015.
- Portuguese Conference on Artificial Intelligence (EPIA) 2013.

Achievements

- Best student paper award, CVPR 2015.
- Selection for the CVPR 2013 Doctoral Consortium and travel award. Mentor: Pedro Felzenszwalb, Associate Professor at Brown University.
- Postdoctoral grant from the Portuguese Science Foundation, ref. SFRH/BPD/84194/2012 supporting research to be performed in Prof. Jitendra Malik's group at the University of California, Berkeley, and in Prof. Jorge Batista's group at the Institute of Systems and Robotics, Coimbra. December 2013 - December 2016
- Pascal VOC 2012 Segmentation Challenge winning entry. See <http://pascallin.ecs.soton.ac.uk/challenges/VOC/voc2012/workshop/index.html>
- Pascal VOC 2011 Segmentation Challenge winning entry. See <http://pascallin.ecs.soton.ac.uk/challenges/VOC/voc2011/workshop/index.html>
- Pascal VOC 2010 Segmentation Challenge co-winning entry. See <http://pascallin.ecs.soton.ac.uk/challenges/VOC/voc2010/workshop/index.html>
- Pascal VOC 2009 Segmentation Challenge winning entry. See <http://pascallin.ecs.soton.ac.uk/challenges/VOC/voc2009/workshop/index.html>
- Student Travel Award - VisHCI 2006, Canberra.
- Doctoral grant from the Portuguese Science Foundation, ref. SFRH/ BD/ 24295/ 2005. January 2006 - December 2008.
- Initiation to Research grant supported by Visual Tools. September 2003 - March 2004

Extracurricular Courses

- **Seminar**—Cologne, Germany
Scientific Writing
– Period: May 9-10, 2011
- **Ph.D. School**—Copenhagen, Denmark
Optimization in Computer Vision
– Period: May 19-23, 2008
- **International Computer Vision Summer School 2007**—Sicily, Italy
Detection, Recognition and Segmentation in Context
– Period: July 9-14, 2007

- **Second Visiontrain thematic school**—Les Houches, France
Neurophysiological and computational models of visual perception
 - Period: March 25-30, 2007
- **AERFAI Summer School**—Granada, Spain
Action and Object Classification Techniques in Digital Images
 - Period: June 12-17, 2006
- **Computational Methods for Estimation, Detection and Identification**—Coimbra, Portugal
Taught by Joao P. Barreto
 - Period: November 2005, March 2006
- **COTEC Entrepreneurship Course**—Coimbra, Portugal
Entrepreneurship of Technological Base
 - Period: from November 2004 to May 2005.
- **Physics Talks**—Coimbra, Portugal
Topics in Astrophysics
 - Period: from November 2002 to February 2003.