

Pierluigi Casale

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Education

Ph.D. **Applied Mathematics and Analysis**, University of Barcelona, on “Approximate Ensemble Methods for Physical Activity Recognition Application” (*with honors*), 2011

M.Sc. **Computer Vision and Artificial Intelligence**, Autonomous University of Barcelona, on “Social Environment Description with Data collected with a Wearable Device”, 2008

M.Sc. **Electrical Engineering**, University of Rome “la Sapienza”, on “Object Recognition using Cellular Neural Networks”, 2006

B.Sc. **Electrical Engineering**, University of Rome “la Sapienza”, on “Communication Protocols for Distributed Systems”, 2003

Professional Experience

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| • Lead Data Scientist, Holst Centre, Eindhoven, The Netherlands | Currently |
| • Post-doc, Signal Processing Group, TU Eindhoven, Eindhoven, The Netherlands | 10/2012-04/2014 |
| • Researcher, Barcelona Digital Technology Centre, Barcelona, Spain | 07/2011 – 09/2012 |
| • Early Stage Researcher, Computer Vision Centre, Barcelona, Spain | 09/2008 – 06/2011 |

Participation in Funded projects

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| • EU FP7 Marie Curie Network iCareNet, G.A. 264738 | 10/2012 – 04/2014 |
| • BackHome, FT7 STREP, G.A. 288566 | 07/2011 - 09/2012 |
| • BrainAble, FP7 STREP, G.A. 247447 | 07/2011 – 09/2012 |
| • SAAPHO, AAL-2010-3-035 | 07/2011 – 09/2012 |

Research and Professional Interests

- Machine Learning, Artificial Intelligence and Deep Learning
- Distributed Cloud-based Methodologies for Big Data Analysis
- Wearable Healthcare and Physical Activity Monitoring
- Distributed Sensors Data Analysis

List of Publications

- Books
 - A. Amato, **P. Casale**, F. Ciompi, S. Seguí, "Advances in Theory and Applications of Computer Vision". Proceedings of the 7th CVC Workshop, CVCRD2012, Ediciones Gráficas Rey S.L., ISBN: 978-84-940231-8-7, October 2012.
 - **P. Casale**, "Approximate Ensemble Methods for Physical Activity Recognition Applications", Ediciones Gráficas Rey S.L., ISBN: 978-84-938351-6-3, November 2011.
- Book Chapters
 - **P. Casale**, O. Pujol and P. Radeva , "Embedding Random projections in Regularized Gradient Boosting Machines" in: Ensemble in Machine Learning Applications", Studies in Computational Intelligence, Volume 373, pp: 201-217, 2011
- Journals
 - M. Altini, **P. Casale**, J. Penders and O. Amft , "Cardiorespiratory Fitness Estimation in Free Living Using Wearable Sensors", Trans. Biomedical Engineering (TMBE) , IEEE (under revision)
 - G. Spina, **P. Casale**, P.S. Albert, J. Alison, J. Garcia-Aymerich, R.W. Costello, N.A. Hernandes, A.J.R. van Gestel, J.D. Leuppi, R. Mesquita, S.J. Singh, F.W.J.M.Smeenk, R. Tal-Singer, E.F.M. Wouters, M.A. Spruit and A.C. den Brinker, "Identifying Physical Activity Profiles in COPD Patients Using Topic Models", Journal of Biomedical and Health Informatics, IEEE, DOI 10.1109/JBHI.2015.2432033, (to appear)
 - M. Altini, **P. Casale**, J. Penders J. and O. Amft, "Personalized Cardiorespiratory Fitness and Energy Expenditure Estimation using Hierarchical Bayesian Networks", Journal of Biomedical Informatics, Elsevier (to appear)
 - M. Altini, **P. Casale**, J. Penders and O. Amft, "Personalization of Energy Expenditure Estimation in Free Living using Topic Models", Journal of Biomedical and Health Informatics, IEEE, DOI 10.1109/JBHI.2015.2432033, (to appear)
 - **P. Casale**, M. Altini, O. Amft, "Transfer Learning in Body Sensor Networks using Ensembles of Randomised Trees", IEEE Internet of Things, 2(1), 33-40, 2015
 - **P. Casale**, "Approximate Polytope Ensemble for One-Class Classification", Electronic Letters on Computer Vision and Image Analysis 13(2): 22-23, 2014
 - **P. Casale**, O. Pujol and P. Radeva, "Approximate Polytope Ensemble for One-Class Classification", Patterns Recognition, 47(2), 854-864, 2014
 - **P. Casale**, O. Pujol and P. Radeva "Personalization and User Verification in Wearable Systems using Biometric Walking Patterns", Personal and Ubiquitous Computing, June 2011, Springer
- International Conferences and Workshops
 - E. Smets, **P. Casale**, U. Grossekathofer, B. Lamichhane, W. De Raet, I. van Diest and C. van Hoof, "A comparison of Data Analysis Techniques for Physiological Stress Monitoring, 5th International Symposium on Pervasive Computing Paradigms for Mental Health (submitted)
 - **P. Casale**, M. Altini, O. Amft, "Transfer Learning in Body Sensor Networks Using Ensembles of Randomised Trees," Wearable and Implantable Body Sensor Networks (BSN), 2014 11th International Conference on , pp.39,44, 16-19 June 2014 [*Nominee Best Paper Award*]
 - **P. Casale**, S. Houben, O. Amft, "1st Workshop on Human Factors and Activity Recognition in Healthcare, Wellness and Assisted Living: Recognize2Interact," Proceedings of the 2013 Conference on Pervasive and Ubiquitous Computing, Adjunct Publication, September 2013, Zurich, Switzerland, ACM, 2013
 - **P. Casale**, O. Amft, "Inferring model structures from inertial sensor data in distributed activity recognition scenarios", AMI 2013: Proceedings of the Joint Conference on Ambient Intelligence, December 2013
 - M. Ratsgoo, G. Lemaitre, X. Rafael Palou, F. Miralles and **P. Casale**, "Pruning AdaBoost for Continuous Sensors Mining Applications", 20th Workshop on Ubiquitous Data Mining, European Conference of Artificial Intelligence, Montpellier, France , August 2012
 - **P. Casale**, J.M. Fernandez, S.Torrellas, X.Rafael, M. Ratsgoo and F. Miralles Home Environments, 8th IEEE International Conference of Intelligent Environments, June 2012
 - **P. Casale**, O. Pujol and P. Radeva, "Approximate Convex hull family for One-class classification", Proceedings of the 10th International Workshop on Multiple Classifiers Systems, Springer, June 2011

- **P. Casale**, O. Pujol and P. Radeva, "Human Activity Recognition from Accelerometer Data using a Wearable Device", June 2011, Proceedings of Pattern Recognition and Image Analysis, 5th Iberian Conference, Springer
- **P. Casale**, O. Pujol and P. Radeva, "User Verification from Walking Activity. First Steps towards a Personal Verification System", in Proceedings of the 1st Conference of Pervasive and Embedded Computing and Communication Systems, ISBN: 978-989-8425-48-5, March 2011
- **P. Casale**, O. Pujol and P. Radeva, "Embedding Random Projections in Regularized Gradient Boosting Machines", in Supervised and Unsupervised Methods and their Applications (SUEMA), ECML-KPDD, September 2010
- **P. Casale**, O. Pujol and P. Radeva, "Face-to-face Social Activity detection using data collected with a wearable device", Proceedings of Pattern Recognition and Image Analysis, 4th Iberian Conference, Springer, June 2009
- Other Workshops Proceedings
 - **P. Casale**, X. Rafael, R. Alessandrello and F. Miralles, SAAPHO: Meeting user's needs for active ageing in AAL scenarios. in: AAL Summit, Bilbao, June 2012
 - S. Torrellas, **P. Casale**, J.M. Fernández, F. Velickovski and F. Miralles, Ambient Intelligence to ease access to seniors to ICT-based self-services. in: Procs of the AAL Forum Lecce, Italy, Advan Berlo, Ilse Bierhoff and Claire Huijnen Eds., December 2011
 - **P. Casale**, O. Pujol and P. Radeva :Classifying Agitation in Sedated ICU Patients, MICCAT workshop, Barcelona, Spain, October 2010
 - **P. Casale**, O. Pujol and P. Radeva, "BeaStreamer-v0.1: a new platform for Multi-Sensors Data Acquisition in Wearable Computing Applications, in Proceedings of the 4th CVC Workshop on the Progress of Research & Development , ISBN : 978-84-937261-1-9, 2009 [*Best Paper Award*]
 - **P. Casale**, O. Pujol, P. Radeva and J.Vitriá : "A first approach to Activity Recognition using Topic Models, in Proceedings of the 12th Catalan Conference on Artificial Intelligence Research and Development, ISBN : 978-1-60750-061-2, 2009
 - **P. Casale**, O. Pujol and P. Radeva : "Social Environment Description from Data Collected with a Wearable Device", in Current Challenges in Computer Vision, Proc. Of the 3rd CVC Workshop, ISBN: 978-84-935251-9-4, 2008