



Lucas Pereira

POST-DOCTORAL RESEARCHER

Madeira Interactive Technologies Institute

CO-FOUNDER AND MACHINE LEARNING LEAD

BrightCuriosity Lda (prisma.com)

CITIZENSHIP

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GOOGLE SCHOLAR

<https://goo.gl/M7Guxq>

EDUCATION

PHD IN COMPUTER SCIENCE - 2016

University of Madeira / Madeira-ITI, Portugal

Thesis: Hardware and Software Platforms for Deploying and Evaluation Non-Intrusive Load Monitoring Systems

Advisor: Nuno Jardim Nunes (University of Madeira / Madeira-ITI), Mario Bergés González (Carnegie Mellon University)

MSC IN COMPUTER SCIENCE - 2011

University of Madeira / Madeira-ITI, Portugal

Thesis: Low Cost Non-Intrusive Home Energy Monitoring

Advisor: Nuno Jardim Nunes (University of Madeira / Madeira-ITI)

ENGINEERING DEGREE IN INFORMATICS - 2007

University of Madeira, Portugal

Thesis: Fox - Visual Business Intelligence for the Web 2.0

Advisors: Pedro Campos (University of Madeira), Duarte Freitas (Anturio Corporation)

PROFESSIONAL EXPERIENCE

POST-DOCTORAL RESEARCHER, JANUARY 2017 - ONGOING

Madeira Interactive Technologies Institute

CO-FOUNDER AND DATA SCIENCE LEAD, JUNE 2015 - ONGOING

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RESEARCH FELLOW, AUGUST 2013 - JANUARY 2014, OCTOBER 2015 - ONGOING

Intelligent Infrastructure Research Lab (INFERLab)
Carnegie Mellon University

INFORMATICS ENGINEER, DECEMBER 2007 - JANUARY 2010

Information Systems and Communications Department
Câmara de Lobos City Hall

HONOURS AND AWARDS

BEST ORAL PRESENTATION, 2018

International NILM Workshop 2018

INDIVIDUAL DOCTORAL GRANT, 2011 - 2015

Portuguese Foundation for Science and Technology

RESEARCH GRANTS

FUTURE INDUSTRIAL KITCHEN (FIK), 2018 - 2019

Horizon 2020, LCE 2

<https://futurekitchen.m-iti.org>

SMART ISLAND ENERGY SYSTEMS (SMILE), 2017 - 2021

Horizon 2020, LCE 2

<https://www.h2020smile.eu>

SME INSTRUMENT - PHASE 1, 2015 - 2016

Horizon 2020, SME Instrument

SMART-SOLAR, 2014-2015

MADFDR-01-0190-FEDER-000015

TEACHING EXPERIENCE

PROGRAMMING PARADIGMS - UNIVERSITY OF MADEIRA, FALL 2017

Introductory programming course to the different engineering and mathematic degrees at the the University of Madeira. Course taught in English and Portuguese.

MASTER STUDENTS

FAYAZ AHMED (UNIVERSITY OF LISBON), 2018/2019 - ONGOING

Thesis: Assessing the Value Proposition of Disaggregated Electricity Consumption Data through Real-World Deployments, In co-supervision with Nuno Jardim Nunes (University of Lisbon)

DINO VASCONCELOS (UNIVERSITY OF MADEIRA), 2017/2018 - ONGOING

Thesis: Smart-Charging of Electric Vehicles - the case of Madeira Island, In co-supervision with Dionisio Barros (University of Madeira)

DONOVAN COSTA (UNIVERSITY OF MADEIRA), 2017/2018 - ONGOING

Thesis: Collaborative Semi-Automatic Labelling for Non-Intrusive Load Monitoring Datasets, In co-supervision with Filipe Quintal (University of Madeira)

RODOLFO GONÇALVES (UNIVERSITY OF MADEIRA), 2013/2014 - 2014/2015

Thesis: OpenDataHub: An Open Dataset Management System, In co-supervision with Nuno Nunes and Filipe Quintal (University of Madeira) | now at blip.pt

RESEARCH ASSISTANTS

EDUARDO GOMES, JANUARY 2019 - ONGOING

Project: MITIExcell

LUÍSA BARROS, AUGUST 2017 - ONGOING

Project: Smart IsLand Energy systems (SMILE)

DANIEL PESTANA, AUGUST 2017 - ONGOING

Project: Smart IsLand Energy systems (SMILE)

REVIEWING AND EDITING

REVIEWER IN JOURNALS

Elsevier International Journal of Electrical Power and Energy Systems: 2018

Elsevier Energy and Buildings: 2017, 2018

ACM Transactions on Intelligent Interactive Systems: 2016

MDPI Energies: 2013, 2014, 2015, 2018, 2019

MDPI Sensors: 2012, 2018

MDPI Urban Science: 2018

MDPI Sustainability: 2018

MDPI Technologies: 2018

MDPI Future Internet: 2018, 2019

REVIEWER IN CONFERENCES

IEEE International Conference on Artificial Intelligence and Virtual Reality - AIVR 2018

IEEE International Conference on Smart Computing - SmartComp 2018

IFIP Conference on Sustainable Internet and ICT for Sustainability - SustainIT 2017

IEEE PES Power Africa Conference - PowerAfrica 2017, 2018

ACM Conference on Computer-Supported Cooperative Work and Social Computing - CSCW 2017, 2018

ACM Conference on Intelligent User Interfaces - IUI 2015, 2017, 2018, 2019

ACM International Conference on Embedded Systems for Energy-Efficient Buildings - BuildSys 2014

ACM CHI Conference on Human Factors in Computing Systems - CHI 2014, 2015

ACM SIGCHI Conference on Mobile Human-Computer Interaction - Mobile HCI 2012, 2013

ACM SIGCHI Symposium on Engineering Interactive Computing Systems - EICS 2014, 2015

ACM SIGCHI Symposium on User Interface Software and Technology - UIST 2014

International Conference on ICT for Sustainability - ICT4S 2014

ACM Nordic Conference on Human-Computer Interaction - NordiCHI 2014

REVIEWER IN WORKSHOPS

International Workshop on Non-Intrusive Load Monitoring - NILM Workshop 2016

ACM Workshop On Embedded Systems For Energy-Efficient Buildings - BuildSys 2012, 2013

EDITOR IN CONFERENCE PROCEEDINGS

The Fifth IFIP Conference on Sustainable Internet and ICT for Sustainability - 2017

EDITOR IN JOURNALS

Guest Editor: *Springer Energy, Ecology and Environment - Special Issue on Energy and Sustainability in Small Developing Economies*

Guest Editor: *Springer Computing - Special Issue on Highlights of ES2DE and IWOB1 2017 - Extended Versions of Selected Best Papers*

CONFERENCE ORGANIZATION

VICE-PROGRAM CHAIR:

The Fifth IFIP Conference on Sustainable Internet and ICT for Sustainability - SustainIT 2017

LOCAL ORGANIZING COMMITTEE:

International Conference on Knowledge Interplay for the Future - IKIF 2018

International Conference on Engineering Applications - ICEA 2017

Advances in Computer Entertainment Technology - ACE 2014

TECHNICAL PROGRAM COMMITTEE:

IEEE International Conference on Artificial Intelligence and Virtual Reality - AIVR 2018

ACM Conference on Intelligent User Interfaces - IUI 2017, 2018, 2019

IEEE International Conference on Smart Computing - SmartComp 2018, 2019

International Workshop on Non-Intrusive Load Monitoring - NILM Workshop 2016

PUBLICATIONS

JOURNALS

1. Torabi, R., Rodrigues, S., Cafôfo, N., **Pereira, L.**, Quintal, F., Nunes, N., Morgado-Dias, F. (2018) "A global monitoring system for electricity consumption and production of household roof-top PV systems in Madeira", *Neural Computing and Applications*, Springer, doi: <https://doi.org/10.1007/s00521-018-3832-3>
2. Baptista, D., Shanawaz Mostafa, S., **Pereira, L.**, Sousa, L., Morgado-Dias, F. (2018) "Implementation Strategy of Convolution Neural Networks on Field Programmable Gate Arrays for Appliance Classification Using the Voltage and Current (V-I) Trajectory", *Energies*, MDPI, doi: 10.3390/en11092460
3. **Pereira, L.**, Nunes, N. (2018) "Performance Evaluation in Non-Intrusive Load Monitoring: datasets, metrics and tools - a review", *WIREs Data Mining and Knowledge Discovery*, John Wiley & Sons, doi: 10.1002/widm.1265
4. Scott, M., **Pereira, L.**, Oakley, I. (2014) "Show Me or Tell Me: Designing Avatars for Feedback", *Interacting with Computers*, Oxford Academic, doi: 10.1093/iwc/iwu008
5. Barreto, M., Szóstek, A., Karapanos, E., Nunes, N. J., **Pereira, L.**, Quintal, F. (2014) "Understanding Families' Motivations for Sustainable Behaviors", *Computers in Human Behavior*, Elsevier, doi:10.1016/j.chb.2014.07.042

CONFERENCES

6. **Pereira, L.**, Gonçalves, R., Quintal, F., Nunes, N.J. (2018) "Data Storage and Maintenance Challenges: The Case of Advanced Metering Infrastructure Systems", in *Proceedings of the International Conference of ICT for Sustainability 2018, ICT4S '18*, [full paper]
7. **Pereira, L.**, Ribeiro, M., Nunes, N.J. (2017) "Engineering and Deploying a Hardware and Software Platform to Collect and Label Non-Intrusive Load Monitoring Datasets", in *Proceedings of the Fifth IFIP International Conference on Sustainable Internet and ICT for Sustainability, SustainIT '17*, [full paper]
8. **Pereira, L.** (2017) "Developing and Evaluating a Probabilistic Event Detector for Non-Intrusive Load Monitoring", in *Proceedings of the Fifth IFIP International Conference on Sustainable Internet and ICT for Sustainability, SustainIT '17*, [full paper]
9. **Pereira, L.**, and Nunes, N.J. (2017) "A Comparison of Performance Metrics for Event Classification in Non-Intrusive Load Monitoring", in *Proceedings of the IEEE International Conference on Smart Grid Communications, SmartGridComm '17*, [full paper]

10. Quintal, F., **Pereira, L.**, Nunes, N.J. and Nisi, V. (2015) "What-a-Watt: Exploring Electricity Production Literacy Through a Long Term Eco-Feedback Study", In *Proceedings of the Fourth IFIP Conference on Sustainable Internet and ICT for Sustainability, SustainIT '15*, [short paper]
11. **Pereira, L.**, Quintal, F., Gonçalves, R. and Nunes, N.J. (2014) "SustData: A Public Dataset for ICT4S Electric Energy Research," In *Proceedings of the International Conference of ICT for Sustainability 2014, ICT4S '14*
12. Quintal, F., **Pereira, L.**, Nunes, N.J., Nisi, V. and Barreto, M. (2013) "WATTSBurning: Design and Evaluation of an Innovative Eco-feedback System" In *Proceedings of the IFIP TC13 Conference on Human-Computer Interaction, INTERACT '13*
13. Quintal, F., Barreto, M., Nunes, N.J., Nisi, V. and **Pereira, L.** (2013) "WattsBurning on my Mailbox: A Tangible Art Inspired Eco-feedback Visualisation for Sharing Energy Consumption" In *Proceedings of the IFIP TC13 Conference on Human-Computer Interaction, INTERACT '13* [short paper]
14. **Pereira, L.**, Quintal, F., Barreto, M. and Nunes, N.J. (2013) "Understanding the Limitations of Eco-feedback: A One Year Long-term study" In *Proceedings of the ACM / IEEE Conference on Human Factors in Computing & Informatics, SouthCHI '13*
15. **Pereira, L.**, Quintal, F., Nunes, N.J. and Berges, M. (2012) "The Design of a Hardware-software Platform for Long-term Energy Eco-feedback Research" In *Proceedings of the ACM SIGCHI Symposium on Engineering Interactive Computing Systems, EICS '12*
16. **Pereira, L.** and Nunes, N.J. (2012) "Low Cost Framework for Non-Intrusive Energy Monitoring and Research" In *Proceedings of the International Conference on Smart Grids and Green IT Systems, SmartGreens '12* [short paper]
17. Nunes, N.J., **Pereira, L.**, Quintal, F. and Berges, M. (2011) "Deploying and Evaluating the Effectiveness of Energy Eco-feedback Through a Low Cost NILM Solution" In *Proceedings of the International Conference on Persuasive Technology, Persuasive '11*
18. Campos, P., Sousa, F., **Pereira, L.**, Perestrelo, C. and Freitas, D. (2007) "Cross-Media User Interfaces for Controlling the Enterprise - The EAGLE Integrated System" In *Proceedings of the International Conference on Enterprise Information Systems, ICEIS '07* [short paper]

WORKSHOPS

19. **Pereira, L.**, Nunes, J.N. (2018) "Comparison of Performance Metrics for Event Detection Algorithms in NILM", In *Proceedings of the 4th International NILM Workshop* [paper]
20. Nunes, N.J., **Pereira, L.** and Nisi, V. (2015) "Towards using Low-Cost Opportunistic Energy Sensing for Promoting Energy Conservation" In *Proceedings of the Fostering Smart Energy Applications Workshop, FSEA '15*, [position paper]

EXTENDED ABSTRACTS, POSTER AND DEMO ABSTRACTS

21. Barros, L., **Pereira, L.**, and Pyakurel, P. (2018) "On the Challenges of Charging Electric Vehicles in Domestic Environments", *Proceedings of the 9th International Conference on Future Energy Systems, e-Energy '18* [poster]
22. **Pereira, L.**, Chisik, Y. (2017) "A Mouse over a Hotspot Survey: An exploration of perceptions of electricity consumption and patterns of indecision", in *Proceedings of the Fifth IFIP International Conference on Sustainable Internet and ICT for Sustainability, SustainIT '17*, [work-in-progress]
23. **Pereira, L.** (2017) "EMD-DF: A Data Model and File Format for Energy Disaggregation Datasets", In *Proceedings of the ACM International Conference on Systems for Energy-Efficient Built Environments, BuildSys '17*, [poster]
24. Ribeiro, M., **Pereira, L.**, Quintal, F. and Nunes, N.J. (2016) "SustDataED: A Public Dataset for Electric Energy Disaggregation Research", In *Proceedings of ICT for Sustainability 2016, ICT4S '16*, [poster]

25. **Pereira, L.** and Nunes, N.J. (2015) "Towards Systematic Performance Evaluation of Non-Intrusive Load Monitoring Algorithms and Systems" In *Proceedings of the Fourth IFIP Conference on Sustainable Internet and ICT for Sustainability, SustainIT '15*, [doctoral consortium]
26. **Pereira, L.** and Nunes, N.J. (2015) "Semi-automatic labeling for Non-Intrusive Load Monitoring Datasets" In *Proceedings of the Fourth IFIP Conference on Sustainable Internet and ICT for Sustainability, SustainIT '15*, [poster]
27. Quintal, F, **Pereira, L.**, Jorge, C. and Nunes, N.J. (2015) "EnerSpectrum: Exposing the source of energy through plug-level eco-feedback" In *Proceedings of the Fourth IFIP Conference on Sustainable Internet and ICT for Sustainability, SustainIT '15*, [poster]
28. **Pereira, L.**, Nunes, N. and Bergés, M. (2014) "SURF and SURF-PI: A File Format and API for Non-Intrusive Load Monitoring Public Datasets" In *Proceedings of the 5th International Conference on Future Energy Systems, e-Energy '14* [poster]
29. Quintal, F, **Pereira, L.**, Nunes, N. and Nivi, V. (2014) "What a watt: Where does my electricity comes from?" In *Adjunct Proceedings of the International Working Conference on Advanced Visual Interfaces, AVI '14* [demo]
30. **Pereira, L.** (2013) "Towards Automating the Performance Evaluation of Non-Intrusive Load Monitoring Systems" In *Proceedings of the International Conference on ICT for Sustainability, ICT4S '13*, [doctoral consortium]
31. Quintal, F, Nisi, V., Nunes, N.J., Barreto, M. and **Pereira, L.** (2012) "HomeTree - An Art Inspired Mobile Eco-feedback Visualization" In *Proceedings of the International Conference on Advances In Computer Entertainment Technology, ACE '12* [demo]
32. Gouveia, L., **Pereira, L.**, Scott, M. and Oakley, I. (2012) "Eco-Avatars: Visualizing Disaggregate Home Energy Usage" In *ACM Conference of Designing Interactive Systems, DIS '12* [demo]
33. Quintal, F, **Pereira, L.** and Nunes, N.J. (2012) "A Long-term Study of Energy Eco-feedback Using Non-Intrusive Load Monitoring" In *Proceedings of the International Conference on Persuasive Technology, Persuasive '12* [poster]

AFFILIATIONS

MEMBERSHIPS

Ordem dos Engenheiros de Portugal (Portuguese Engineers Association)	[2011 - present]
IEEE	[2011 - present]
Computer Society	[2011 - present]
Power & Energy Society	[2012 - present]
Computational Intelligence Society	[2017 - present]
Signal Processing Society	[2019 - present]
Intelligent Transportation Systems Society	[2019 - present]
Systems, Man, and Cybernetics Society	[2019 - present]
ACM	[2017 - present]