Miquel Perelló Nieto

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Education

- **Ph.D. in Computer Science**   **2016 – 2023**
  University of Bristol   *Bristol, UK*
  - Thesis **"Uncertainty aware classification: Augmenting classifiers to handle uncertainty"**.

- **M.Sc. in Machine Learning and Data Mining**   **2013 – 2015**
  Aalto University School of Science   *Espoo, Finland*
  - Thesis **"Merging chrominance and luminance in early, medium and late fusion using Convolutional Neural Networks"** with distinction.

- **M.Sc. in Artificial Intelligence**   **2012 – 2015**
  Consortium of three universities: *Catalonia, Spain*
  Technical University of Catalonia, University of Barcelona, and Rovira i Virgili University
  - Information retrieval, Robotics, Computer vision, Computational intelligence

- **B.Sc. in Technical Engineer in Computer Systems**   **2007 – 2012**
  Barcelona School of Informatics at the Technical University of Catalonia   *Barcelona, Spain*
  - Thesis **"Design of a platform to test distributed control systems"** with distinction.

- **Vocational Training in Development of electronic devices**   **2004 – 2006**
  Escola del treball   *Barcelona, Spain*

- **High school degree with specialisation on Science and Technology**   **2002 – 2004**
  Col·legi la Mercè - Martorell   *Martorell, Spain*
  - Research project on **"Sub-atomic world and particle accelerators"**.

Publications

1. **A multi-sensor dataset with annotated activities of daily living recorded in a residential setting** Tonkin, E. L., Holmes, M. H., Song, H., Twomey, N. J., Diethe, T. R., Kull, M., Perello Nieto, M., Camplani, M., Hannuna, S. L., Fafoutis, X., Zhu, N., Woznowski, P. R., Tourte, G. J. L., Santos-Rodriguez, R., Flach, P. A. & Craddock, I. J., Sci Data 10, 162 (2023).

2. **Classifier calibration: a survey on how to assess and improve predicted class probabilities** de Menezes e Silva Filho, T., Song, H., Perello Nieto, M., Santos-Rodriguez, R., Kull, M. & Flach, P. A., 16 May 2023, In: Machine Learning. 112, 9, p. 3211-3260 50 p.

3. **Toward Enhanced Clinical Decision Support for Patients Undergoing a Hip or Knee Replacement: Focus Group and Interview Study With Surgeons** Grant, S., Tonkin, E. L., Craddock, I. J., Blom, A. W., Holmes, M. H., Judge, A., Masullo, A., Perello Nieto, M., Song, H., Whitehouse, M. R., Flach, P. A. & Gooberman-Hill, R., 24 Apr 2023, In: JMIR Perioperative Medicine. 6, 1, e36172.

4. **When the Ground Truth is not True: Modelling Human Biases in Temporal Annotations** Yamagata, T., Tonkin, E. L., Arana Sanchez, B., Craddock, I. J., Perello Nieto, M., Santos-Rodriguez, R., Yang, W. & Flach, P. A., 11 Jan 2023, (Accepted/In press). 6 p.

5. **Recognizing human activities with attention mechanism on multi-source sensor data** Bi, H., Perello Nieto, M., Tonkin, E. L., Santos-Rodriguez, R., Flach, P. A. & Craddock, I. J., 28 Dec 2022.

6. **Data labelling in the wild: annotating free-living activities and Parkinson's disease symptoms** Morgan, C. A. M., Heidarivincheh, F., Craddock, I., Mcconville, R., Perello Nieto, M., Tonkin, E. L., Masullo, A., Vafeas, A. T., Kim, M., Mcnaney, R., Tourte, G. J. L. & Whone, A. L., 26 Mar 2021, 2021 IEEE International Conference on Pervasive Computing and Communications Workshops and other Affiliated Events, PerCom Workshops 2021: 2021 IEEE International Conference on Pervasive Computing and Communications Workshops and other Affiliated Events (PerCom Workshops). Institute of Electrical and Electronics Engineers (IEEE), p. 471-474 4 p. 9431017. (2021 IEEE International Conference on Pervasive Computing and Communications Workshops and other Affiliated Events, PerCom Workshops 2021).

7. **On the Selection of Loss Functions Under Known Weak Label Models** Bacaicoa-Barber, D., Perello Nieto, M., Santos-Rodriguez, R. & Cid-Sueiro, J., 7 Sept 2021, p. 332-343. 12 p.

8. **Attention Network-Based Human Acticity Recognition Using Fused Sensor Data** Bi, H., Perello Nieto, M., Tonkin, E. L., Santos-Rodriguez, R. & Flach, P. A., 2020, (In preparation) In: Sensors.

9. **Human Activity Recognition Based on Dynamic Active Learning** Bi, H, Perello Nieto, M, Santos-Rodriguez, R & Flach, PA. 2020, IEEE Journal of Biomedical and Health Informatics.

10. **Recycling weak labels for multiclass classification** Perello Nieto, M., Santos-Rodriguez, R., Garcia-Garcia D., Cid-Sueiro, J. 2020, Journal of Neurocomputing (Volume 400, pp. 206-215).

11. **Beyond temperature scaling: Obtaining well-calibrated multiclass probabilities with Dirichlet calibration** Kull, M., Perello Nieto, M., Kängsepp, M., Silva Filho, T., Song, H., Flach, P. 2019, In Advances in Neural Information Processing Systems (pp. 12295-12305).

12. **Modelling patient behaviour using IoT sensor data: A case-study to evaluate techniques for modelling domestic behaviour in recovery from total hip replacement surgery** Holmes, M., Perello Nieto, M., Song, H., Tonkin, E. L., Grant, S. & Flach, P. A., 2020, (Submitted) In: Journal of Healthcare Informatics Research.

13. **Towards a methodology for acceptance testing and validation of monitoring bodyworn devices** Tonkin, E. L., Perello Nieto, M., Bi, H. & Vafeas, A. T., 4 Aug 2020, 2020 IEEE International Conference on Pervasive Computing and Communications Workshops (PerCom Workshops). IEEE Computer Society, 6 p. Research output: Chapter in Book/Report/Conference proceeding › Conference Contribution (Conference Proceeding)

14. **HyperStream: a Workflow Engine for Streaming Data** Diethe, T., Kull, M., Twomey, N., Sokol, K., Song, H., Perello-Nieto, M., Tonkin, E. & Flach, P. , 7 Aug 2019, In : arXiv.

15. **Analysis of patient domestic activity in recovery from hip or knee replacement surgery: modelling wrist-worn wearable RSSI and accelerometer data in the wild** Holmes, M., Song, H., Tonkin, E. L., Perello Nieto, M., Grant, S. & Flach, P., 13 Jul 2018, Proceedings of the 3rd International Workshop on Knowledge Discovery in Healthcare Data: co-located with the 27th International Joint Conference on Artificial Intelligence and the 23rd European Conference on Artificial Intelligence (IJCAI-ECAI 2018). CEUR Workshop Proceedings, p. 13-20 8 p. (CEUR Workshop Proceedings; vol. 2148).

16. **Releasing eHealth analytics into the wild: Lessons learnt from the SPHERE project** Diethe, T, Nieto, MP, Tonkin, E, Holmes, M, Sokol, K, Twomey, N, Kull, M, Song, H & Flach, P 2018, KDD'18: Proceedings of the 24th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining. Association for Computing Machinery (ACM), pp. 243-252

17. Perelló-Nieto, M., Santos-Rodríguez, R. and Cid-Sueiro, J.
Adapting Supervised Classification Algorithms to Arbitrary Weak Label Scenarios , in Advances in Intelligent Data Analysis XVI: 16th International Symposium, IDA 2017, London, UK, October 26–28, 2017, Proceedings. Springer Verlag, pp. 247-259

18. Perelló-Nieto, M., Silva Filho, T.M., Kull, M. and Flach, P.
Background Check: A general technique to build more reliable and versatile classifiers , in IEEE 16th International Conference on Data Mining (ICDM2016), Barcelona, Spain, Dec, 2016.

19. Fuertes, J. M., Villà, R., Ayza, J., Mars, P., Martí, P., Velasco, M., Yepez, J., Torres, G., Perelló, M.
Hands-on Course in Networked Control Systems , Spain.In 20th Mediterranean Conference on Control and Automation (MED2012), Barcelona, Spain, July, 2012.

20. Fuertes, J. M., Villà, R., Ayza, J., Mars, P., Martí, P., Velasco, M., Yepez, J., Torres, G., Perelló, M.
Design of a Hands-on Course in Networked Control Systems XV Jornadas de Tiempo Real, Santander, Spain, January, 2012.

Work experience

- **Research Associate** **2022 – Curr**
  University of Bristol, Department of Electrical and Electronic Engineering *Bristol, UK*
  - Project TAILOR – Foundations of Trustworthy AI - Integration Reasoning, Learning and Optimization
  - Granted by HORIZON 2020

- **Research Associate** **2018 – 2022**
  University of Bristol, Department of Electrical and Electronic Engineering *Bristol, UK*
  - Project SPHERE Next Steps
  - Granted by EPSRC IRC

- **Research Associate** **2017 – 2018**
  University of Bristol, Department of Electrical and Electronic Engineering *Bristol, UK*
  - Project SPHERE – a Sensor Platform for HEalthcare in a Residential Environment
  - Granted by EPSRC IRC – Engineering and Physical Science Research Council an Interdisciplinary Research Collaboration

- **Research Associate** **2016 – 2017**
  University of Bristol, Department of Engineering Mathematics *Bristol, UK*
  - Activity recognition using multivariate time series modeling

- **Research Assistant** **2016 – 2016**
  Université de Strasbourg, ICube Laboratory *Strasbourg, France*
  - Project REFRAME – Rethinking the Essence, Flexibility and Reusability of Advanced Model Exploitation
  - Granted by CHIST-ERA – European Coordinated Research on Long-term Challenges in Information and Communication Sciences & Technologies ERA-Net

- **Research Assistant** **2015 – 2016**
  University of Bristol, Intelligent Systems Laboratory *Bristol, UK*
  - REFRAME project granted by CHIST-ERA

- **Research Assistant** **2014 – 2015**
  Aalto University School of Science *Espoo, Finland*
  - Unsupervised Learning of Multiple Languages Using Recurrent Neural Networks
  - On the use of Convolutional Neural Networks for spatio-temporal feature extraction

- **Software Designer/Developer & Systems Administrator** **2010 – 2013**
  FACERAS, S.L. *Barcelona, Spain*
  - Development of an access control system along several buildings of Barcelona.

- **Installer & Technical Service Manager** **2006 – 2010**
  DN Electrónic 2002, S.A. *Martorell, Spain*

Other activities

- PyData Bristol Meetup co-organiser 2017-2020
- Attended Machine Learning Summer School (Madrid) 2018
- Attended ACAI-TAILOR Summer School (Barcelona) 2022

- Group facilitator at a Data Study Group 2019 (The Alan Turing Institute)
- Short lecture to Intro to AI course at University of Bristol in 2020
- Program Committee member ECML-PKDD 2020, 2023
- Reviewer for Neurcomputing in 2020, 2021, 2022, 2023
- Reviewer for the Journal of Visual Communication and Image Representation since 2019
- Reviewer at SafeAI 2021
- Reviewer for the Royal Society Open Science in 2022
- Reviewer for the Journal of Artificial Intelligence Review in 2023
- Reviewer for the Journal of Knowledge and Information Systems in 2023