Fernando Moreno-Pino

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Universidad Carlos III de Madrid. Dpt. of Signal Theory and Communications.
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POSITIONS

University of Oxford   Oxford, UK
Visiting Researcher, Oxford Man Institute of Quantitative Finance   *May 2022 - Present*

- **Supervisor**: Prof. Dr. Stefan Zohren.
- **Summary**: Studying and developing of novel neural-based tools and methods for the problem of assets' volatility forecasting.

Universidad Carlos III de Madrid   Madrid, Spain
Research Associate, Signal Processing Group   *Sep. 2018 - Present*

- **Supervisor**: Prof. Dr. Antonio Artés Rodríguez.
- **Summary**: During my PhD studies, I collaborate with the Universidad Carlos III de Madrid in teaching and research activities.

Universidad Carlos III de Madrid   Madrid, Spain
Research Assistant, Signal Processing Group   *Dec. 2017 - Sep. 2018*

- **Supervisor**: Prof. Dr. Antonio Artés Rodríguez.
- **Summary**: My work was focused on the Human Activity Recognition problem, applying Machine Learning Techniques to data captured by users' wearables. I also worked on the validation of the sleep measurement efficiency of these wearable devices.

Universidad de Málaga   Málaga, Spain
Research Assistant, Department of Programming Languages and Computer Science   *Jan. 2016 - Sep. 2016*

- **Supervisor**: Prof. Dr. Pedro Merino Gómez.
- **Summary**: I worked at the MORSE Research Group during my Bachelor Thesis, focused in QoS and QoE services for VoIP and VoLTE technologies in 4G mobile networks.

EDUCATION

Universidad Carlos III de Madrid   Madrid, Spain
PhD Student in Machine Learning   *Sep. 2018 – Present*

- **Advisor**: Prof. Dr. Antonio Artés Rodríguez.

Universidad Carlos III de Madrid   Madrid, Spain
M.Sc. in Telecommunications Engineering   *Sep. 2016 – Jul. 2018*

Universidad de Málaga   Málaga, Spain
B.Sc. in Telecommunications Engineering   *Sep. 2012 – Jul. 2016*

- **Graduated with Honors**: Best academic record of the class.

PUBLICATIONS

- Moreno-Pino, F., Sükei, E., Olmos, P. M., Artés-Rodríguez, A. (2022). PyHHMM: A Python Library for Heterogeneous Hidden Markov Models. arXiv preprint arXiv:2201.06968, submitted to the Journal of Machine Learning Research, Machine Learning Open Source Software section.

- Moreno-Pino, F., Olmos, P. M., Artés-Rodríguez, A. (2021). Deep Autoregressive Models with Spectral Attention. arXiv preprint arXiv:2107.05984, submitted to Pattern Recognition.

- Ríos-Muñoz, G. R., Moreno-Pino, F., Soto, N., M. Olmos, P. , Artés-Rodríguez, A., Ferández-Avilés, F., & Arenal, A. (2020). Hidden Markov Models for Activity Detection in Atrial Fibrillation Electrograms. In 2020 Computing in Cardiology (pp. 1-4). IEEE.

- Moreno-Pino, F., Porras-Segovia, A., López-Esteban, P., Artés, A., & Baca-García, E. (2019). Validation of Fitbit Charge 2 and Fitbit Alta HR against polysomnography for assessing sleep in adults with obstructive sleep apnea. Journal of Clinical Sleep Medicine, 15(11), 1645-1653.

TEACHING

- **BBVA** — Madrid, Spain
  Teaching Staff, Associated with Fundación Universidad Carlos III — *Sep. 2021 – Present*
    - **Advance Machine Learning Course**: 2022.
    - **Natural Language Processing (NLP) Course**: 2021, 2022.

- **Universidad Carlos III de Madrid** — Madrid, Spain
  Teaching Assistant (Bachelor in Electrical Engineering & Data Science and Engineering) — *Sep. 2018 – Present*
    - **Machine Learning II**: 1st Semester 2021.
    - **Modern Theory of Detection and Estimation**: 1st Semester 2018, 2019.
    - **Communications Theory**: 1st Semester 2018, 2019.
    - **Linear Systems**: 1st Semester 2018.

HONOR AND AWARDS

- **FPU Grant**: My doctoral studies are funded by the Spanish Ministry of Education.
- **'Premios Extraordinarios de Fin de Estudios'**: This prize rewards the student with the best academic record, granted by Universidad de Málaga for my Bachelor studies.
- **'Premios Ingenio', Finalist**: These prizes award the best thesis of the year on the field of Telecommunications Engineering, in the Region of Andalusia, Spain.

SUMMER SCHOOLS AND OTHERS

- **University of Sheffield** — Sheffield, United Kingdom [Online]
  The Gaussian Process Summer School — *Sep. 2021*

- **University of Sheffield** — Sheffield, United Kingdom [Online]
  The Gaussian Process Summer School — *Sep. 2020*

- **Liège Université** — Liége, Belgium [Online]
  Machine Learning Frontiers in Precision Medicine (MLFPM) — *Sep. 2020*

- **ETH Zürich** — Basel, Switzerland
  Machine Learning Frontiers in Precision Medicine (MLFPM) — *Sep. 2019*

- **Skoltech** — Moscow, Russia
  Machine Learning Summer School (MLSS) — *Aug. 2019 – Sep. 2019*

- **École Polytechnique** — Paris, France
  Data Science Summer School (DS3) — *Jun. 2018*

COURSES

- **University of California, Santa Cruz** — Coursera [Online]
  Bayesian Statistics: From Concept to Data Analysis, 4 weeks course — *Jul. 2021*

- **DeepLearning.AI** — Coursera [Online]
  Structuring Machine Learning Projects, 3 weeks course — *May 2018*

- **DeepLearning.AI** — Coursera [Online]
  Improving DNNs: Hyperparameter Tuning, Regularization and Optimization, 2 weeks course — *May 2018*

- **Universidad Internacional Menéndez Pelayo** — Barcelona, Spain
  English Inmersion Course — *Apr. 2018*

- **DeepLearning.AI** — Coursera [Online]
  Neural Networks and Deep Learning, 4 weeks course — *Mar. 2018*

- **Stanford University** — Coursera [Online]
  Machine Learning, 11 weeks course — *Feb. 2018*

- **University of Washington** — Coursera [Online]
  Machine Learning: Classification, 7 weeks course — *Nov. 2017*

- **University of Washington** — Coursera [Online]
  Machine Learning: Regression, 6 weeks course — *Oct. 2017*

- **University of Washington** — Coursera [Online]
  Machine Learning Foundations, 6 weeks course — *Jul. 2017*

- **Nvidia Corporation, CUDA Fellows Program & Universidad de Málaga** — Málaga, Spain
  Technical Training Course: Parallel Programming of the GPU with CUDA — *Jul. 2019 – Aug. 2019*

Languages

- **Spanish**: Native language.
- **English**: Advanced, TOEFL:102/120.
- **French**: Basic.

Projects

- **Heterogeneous Hidden Markov Model**: Python implementation of a HMM model capable of managing heterogeneous and missing data: **https://github.com/fmorenopino/HeterogeneousHMM**, **https://pyhhmm.readthedocs.io/**.
- **VoIP calls**: C implementation of a Voice over IP calls' service (point-to-point audio conference). RTP over UDP was used: **https://github.com/fmorenopino/c_calls**.

Programming Skills

- **Languages**: Python, Matlab, C, C++   **Technologies**: Pytorch, Keras, Sklearn, Jupyter, Git, LaTeX

Referees

- Prof. Dr. Antonio Artés Rodríguez, Universidad Carlos III de Madrid, Spain.

- Prof. Dr. Pablo Martínez Olmos, Universidad Carlos III de Madrid, Spain.