PEDRO HERRUZO SÁNCHEZ

Associate Pre-doctoral Research Fellow at IARAI
Ph.D. Student in AI at the Polytechnic University of Catalonia

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EXPERIENCE

Associate Pre-doctoral Research Fellow
Institute of Advanced Research in Artificial Intelligence - IARAI

📅 Feb 2020 - Present · +1 yrs   ♀ Vienna, Austria / remote

Deep Learning for Spatio-Temporal Data: **Video Prediction**, and **Datasets and Metrics Creation**. Data Fusion (Multimodal & Multiresolution), Transfer / Few-Shot Learning, and Extreme Events. **Co-organizer of**:
- The Weather4cast competition @IEEE Big Data Cup 2021
- The Traffic4cast competition @NeurIPS 2020 and 2021
- 1st Workshop on Complex Data Challenges in Earth Observation @CIKM 2021

Machine Learning Consultant & Data Scientist
SEAT, S.A.

📅 Sep 2017 - Sep 2020 · 3 yrs   ♀ Barcelona, Spain

Leading Machine Learning for future urban mobility:
- Mobility Advisor (presented in MWC 19 together with IBM).
- Socially Responsible Navigation (presented in SCEWC 18 together with Waze and the city council of Barcelona).

Graduate Research Fellowship
University of Barcelona - CVUB group

📅 Sep 2016 - Jul 2017 · 11 mos   ♀ Barcelona, Spain

Explainable deep learning for the automatic recognition of lifestyle patterns (time spent eating, socializing, and seated) from wearable cameras.

BI Consultant
Indra Sistemas, S.A.

📅 May 2014 - Feb 2016 · 1 yr 10 mos   ♀ Barcelona, Spain

Exploitation of Data Warehouse Commercial Segurcaixa, Vidacaixa.

HONORS AWARDS

🏆 **NeurIPS2019 Workshop: Outstanding Contribution**
Traffic4cast competition by the Institute of Advanced Research in Artificial Intelligence (IARAI) and HERE Technologies.

🏆 **Climate Change Challenge 2019: 3th position**
Organized by the University of Barcelona, ISGlobal, and Ajuntament de Barcelona: Modeling the weather in the city of Barcelona.

🏆 **Big Data & AI Congress Barcelona 2018: Best Master Thesis**
We analyzed first-person stories automatically by means of egocentric pictures acquired with wearable cameras using AI.

💗 **DKV Seguros Health4Good 2016: Ideas Contest for Startups**
Second prize: an App that can create nutrition diaries automatically from only pictures, also proposing healthy eating habits.

EDUCATION

Ph.D. in Artificial Intelligence
Polytechnic University of Catalonia

📅 2018 - 2022   ♀ Barcelona, Spain

Deep learning for Spatio-temporal data with applications to mobility and weather forecasting

Deep Learning Indaba 2019
Kenyatta University - Summer School

📅 Summer 2019   ♀ Nairobi, Kenya

M.Sc. in Fundamental Principles of Data Science
University of Barcelona

📅 Sep 2016 - Jun 2017   ♀ Barcelona, Spain

Double B.Sc. in Computer Engineering and Mathematics
University of Barcelona

📅 Sep 2010 - Jan 2016   ♀ Barcelona, Spain

University of Groningen - Erasmus

📅 Feb 2016 - Jul 2016   ♀ Groningen, Netherlands

B.BA. in Business Administration and Management
University of Barcelona

📅 Sep 2008 - Jun 2010   ♀ Barcelona, Spain

TEACHING

Teaching Assistant
Pompeu Fabra University

📅 Sep 2018 - Feb 2021   ♀ Barcelona, Spain

Intro to Programming: 1st-year / Python.

University of Barcelona

📅 Jan 2017 - Sep 2017   ♀ Barcelona, Spain

- Data Structures: 1st-year / C++.
- Operating systems I: 2nd-year / C.

PUBLICATIONS

📄 Articles

- Kopp, Michael et al. (2021). "Traffic4cast at NeurIPS 2020 - yet more on the unreasonable effectiveness of gridded geo-spatial processes". In: Proceedings of Machine Learning Research 133. Ed. by Hugo Jair Escalante and Katja Hofmann, pp. 325–343. URL: `https://proceedings.mlr.press/v133/kopp21a.html`.
- Herruzo, Pedro and Josep L. Larriba-Pey (2020). "Recurrent Autoencoder with Skip Connections and Exogenous Variables for Traffic Forecasting". In: Proceedings of Machine Learning Research 123. Ed. by Hugo Jair Escalante and Raia Hadsell, pp. 47–55. URL: `http://proceedings.mlr.press/v123/herruzo20a.html`.
- Kreil, David P et al. (2020). "The surprising efficiency of framing geo-spatial time series forecasting as a video prediction task – Insights from the IARAI 4c Competition at NeurIPS 2019". In: Proceedings of Machine Learning Research 123. Ed. by Hugo Jair Escalante and Raia Hadsell, pp. 232–241. URL: `http://proceedings.mlr.press/v123/kreil20a.html`.
- Herruzo, Pedro et al. (2019). "Towards Objective Description of Eating, Socializing and Sedentary Lifestyle Patterns in Egocentric Images". In:
- – (2017). "Analyzing First-Person Stories Based on Socializing, Eating and Sedentary Patterns". In: Lecture Notes in Computer Science 10590, pp. 109–119. URL: `https://arxiv.org/pdf/1707.07863.pdf`.
- Herruzo, P., M. Bolaños, and P. Radeva (2016). "Can a CNN recognize Catalan diet?" In: *AIP Conference Proceedings* 1773, p. 020002. URL: `https://aip.scitation.org/doi/abs/10.1063/1.4964956`.

SELECTED TALKS

1 The Weather4cast competition @IEEE Big Data Cup 2021.
July 2021 · Virtual · ICML: Weather4cast Challenge @IARAI.

2 Recurrent Autoencoder with Skip Connections and Exogenous Variables for Traffic Forecasting
Dec 2019 · Vancouver, Canada · NeurIPS: Traffic4cast Challenge.

Towards Objective Description of Eating, Socializing and Sedentary Lifestyle Patterns in Egocentric Images
Sep 2019 · Cardiff, UK · British Machine Vision Conference.

3 Keeping Society Moving In A Connected World
Feb 2019 · BCN · 4YFN / MWC w. Avichai Bakst @Waze.

4 Socially Responsible Navigation
Nov 2018 · BCN · SCEWC w. Luca de Meo (CEO @SEAT, S.A.).

5 Big Data Talent Awards for the best master thesis
Nov 2018 · Big Data & AI Congress Barcelona Congress.

SEAT S.A. from a Car Manufacturer to a Mobility provider
Nov 2017 · Barcelona · IOT Solutions World Congress.

[1] `https://youtu.be/1DRZaiUlfUE`
[2] `https://youtu.be/8y_Pwiy9C5M?t=2681`
[3] `https://youtu.be/qERNVybd1Z8?t=628`
[4] `https://www.youtube.com/watch?v=Qo0mbgm5sHA`
[5] `https://www.youtube.com/watch?v=cqcCK3YHDVk&t=4m13s`

ABOUT ME

*"I am a **technology enthusiast**, with a strong technical background in **machine learning**, **math** and **programming**, and the experience to bring these fields together to create useful **real-life applications**. Throughout my life, I have had the opportunity to develop proficient **public speaking**, teamwork, time management, and leadership skills. I take **pleasure in overcoming challenges** and being creative, dedicated, and proactive. I enjoy human relations and like getting involved in and helping to manage social activities."*

STRENGTHS

Communication · Management · Social Skills · Strategy

Machine Learning · Computer Vision · Explainable AI · Transformers · Graph Neural Networks · Recurrent Neural Networks · Spatio-Temporal Data · Caffe, Keras, PyTorch

C · C++ · C# · Java · Matlab · Python · R

CSS · HTML · Javascript

LANGUAGES

Catalan ●●●●●

English ●●●●○

Spanish ●●●●●