

PEDRO HERRUZO SÁNCHEZ

Associate Pre-doctoral Research Fellow at IARAI
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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: Data Fusion (Multimodal & Multiresolution), Transfer Learning / Few-Shot Learning, and Modeling Sparse 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 ego-centric 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

- 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* 1773.1, p. 020002. DOI: 10.1063/1.4964956. eprint: <https://aip.scitation.org/doi/pdf/10.1063/1.4964956>. URL: <https://aip.scitation.org/doi/abs/10.1063/1.4964956>.

TALKS

-  **The Weather4cast competition @IEEE Big Data Cup 2021.**
July 2021 · Virtual · ICML: Weather4cast Challenge @IARAI.
-  **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.
-  **Keeping Society Moving In A Connected World**
Feb 2019 · BCN · 4YFN / MWC w. Avichai Bakst @Waze.
-  **Socially Responsible Navigation**
Nov 2018 · BCN · SCEWC w. Luca de Meo (CEO @SEAT, S.A.).
-  **Big Data Talent Awards for the best master thesis**
Nov 2018 · Big Data & AI Congress Barcelona Congress.
-  **Barcelona towards a data-driven City: When data is the key in-frastructure**
Oct 2018 · Barcelona · Open Data Barcelona (round-table).
-  **SEAT S.A. from a Car Manufacturer to a Mobility provider**
Nov 2017 · Barcelona · IOT Solutions World Congress.

¹<https://youtu.be/1DRZaiU1fUE>

²https://youtu.be/8y_PwiY9C5M?t=2681

³<https://youtu.be/qERNVyb1Z8?t=628>

⁴<https://www.youtube.com/watch?v=Qo0mbgm5sHA>

⁵<https://www.youtube.com/watch?v=cqcCK3YHDV&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 ●●●●●