

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

Deep Learning for Spatio-Temporal Data: Data Fusion (Multimodal & Multiresolution), Transfer Learning / Few-Shot Learning, and Modeling Sparse Events.

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).

Research Scholarship

University of Barcelona

Sep 2016 - Jul 2017 · 11 mos

Barcelona, Spain

Graduate Student Researcher at the CVUB group (ub.edu/cvub/) under the supervision of professor Petia Radeva: Deep Learning methodologies applied to Egocentric images.

BI Consultant

Indra Sistemas, S.A.

May 2014 - Feb 2016 · 1 yr 10 mos

Barcelona, Spain

Exploitation of Data Warehouse Commercial Segurcaixa, Vidacaixa: Gathering requirements, functional and technical definition, designing and developing ETL processes with SAP BO, PowerCenter, Oracle and Control-M.

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

2017 - 2020

Barcelona, Spain

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

Summer School · Deep Learning Indaba 2019

Kenyatta University

Summer 2019

Nairobi, Kenya

Strengthen African Machine Learning.

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 - Present

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


Conference Proceedings

- Herruzo, Pedro and Josep L. Larriba-Pey (2020). "Recurrent Autoencoder with Skip Connections and Exogenous Variables for Traffic Forecasting". In: *Proceedings of the NeurIPS 2019 Competition and Demonstration Track*. Ed. by Hugo Jair Escalante and Raia Hadsell. Vol. 123. Proceedings of Machine Learning Research. PMLR, 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 the NeurIPS 2019 Competition and Demonstration Track*. Ed. by Hugo Jair Escalante and Raia Hadsell. Vol. 123. Proceedings of Machine Learning Research. PMLR, 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: *EgoApp Workshop, British Machine Vision Conference (BMVC) 2019*.
- (2017). "Analyzing First-Person Stories Based on Socializing, Eating and Sedentary Patterns". In: *ICIAP Workshops*. Vol. 10590. Lecture Notes in Computer Science. Springer, pp. 109–119. URL: <https://arxiv.org/pdf/1707.07863.pdf>.


Journal Articles


- 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

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

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

 **2** **Keeping Society Moving In A Connected World**
Feb 2019 · Barcelona · 4YFN, side event of the Mobile World Congress with Avichai Bakst, Director of Business Development at Waze.

 **3** **Socially Responsible Navigation**
Nov 2018 · Barcelona · Smart City Expo World Congress, with Luca de Meo (president of SEAT, S.A.), and Jordi Caus (head of future urban concepts).

 **4** **Big Data Talent Awards for the best master thesis**
Nov 2018 · Big Data & AI Congress Barcelona Congress, with Laura Portell and Alberto Soto.

¹https://youtu.be/8y_Pwiy9C5M?t=2681

²<https://youtu.be/qERNVyb1Z8?t=628>

³<https://www.youtube.com/watch?v=Qo0mbgm5sHA>

⁴<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 ●●●●●



Barcelona towards a data-driven City: When data is the key infrastructure

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, with Josep L. Larriba-Pey (Co Founder of Sparsity Technologies).