Guillermo **Ortiz Jiménez**

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Personal Profile

PhD researcher working at EPFL under the supervision of Prof. Pascal Frossard, developing an understanding of deep learning systems through the lens of adversarial perturbations.

Education

(Nov 2022) - Nov 2018 | **PhD. in Electrical Engineering**
École Polytechnique Fédérale de Lausanne (EPFL), Switzerland
- **Thesis topic**: Local function dynamics of deep neural networks
- **Thesis director**: Prof. Pascal Frossard

Aug 2018 - Sep 2016 | **M.Sc. Electrical Engineering** (Best Graduate, *cum laude*)
Delft University of Technology, Netherlands
- **Master Thesis:** Multidomain graph signal processing: Learning and sampling
- **Thesis supervisor**: Prof. Geert Leus

Jun 2015 - Sep 2011 | **B.Sc. in Telecommunication Engineering** (Best Graduate)
Universidad Politécnica de Madrid, Spain
- **Erasmus Exchange** (2014-2015) at *Vienna University of Technology*, Austria
- **Bachelor Thesis:** Overcomplete dictionary learning for sparse representation of images

Ongoing - Sep 2017 | **B.Sc. in Physics**
Universidad Nacional de Educación a Distancia, Spain
Distance learning (3rd year)

Work and Research Experience

(Nov 2022) - Nov 2017 | **Doctoral Assistant**
Signal Processing Laboratory. École Polytechnique Fédérale de Lausanne, Switzerland
- Studying adversarial perturbations and the vulnerability of deep networks to them.
- Teaching assistant of *Computational optimal transport* and *A network tour of data science*.
- Supervising multiple master projects in neural network pruning and dynamic graph CNNs.

Aug 2018 - Nov 2017 | **Master Thesis**
Circuits and Systems Group. Delft University of Technology, The Netherlands
- Defined a new type of graph convolutional layer for deep learning on multidomain graphs.
- Designed novel sampling algorithm for tensor signals based on submodular optimization.
- Applications in recommender systems, epidemiology, fake news detection, etc.

Oct 2017 - Jul 2017 | **Research Intern**
Philips Research Hamburg, Germany
- Involved in different projects related to computational medical imaging and fetal ultrasound
- Research on self-supervised deep learning for medical image reconstruction.

Jul 2016 - Sep 2015 | **Research Assistant**
Microwaves and Radar Group. Universidad Politécnica de Madrid, Spain
- Research at the intersection of computer graphics, vision, and radar technology.

Languages

Spanish: Native **English:** Full Proficiency (C2) **German:** Upper intermediate (B2)
French: Intermediate (B1) **Dutch:** Beginner (A1)

Main Scholarships and Awards

Dec 2018 | **National Award for Excellence in Academic Performance (2nd Prize)**
Ministry of Education of Spain
• Most prestigious award granted by the Government of Spain to students in all academic fields that showed an oustanding accomplishment during their undergraduate studies.

Aug 2018 - Sep 2016 | **"La Caixa" Postgraduate Fellowship**
La Caixa Bank Foundation
• One of the most prestigious postgraduate fellowships in Spain.
• It provided complete funding of my master studies.

Nov 2018 Oct 2015 | **Best Graduate (Valedictorian)**
Delft University of Technology and Universidad Politécnica de Madrid
• Top student of the Faculty of Telecommunications.

2015-2012 | **Academic Excellence Scholarship**
Autonomous Community of Madrid
• Yearly allowance to the top undergraduate students in Madrid.

Publications

- **G. Ortiz-Jiménez** et al. "CDOT: Continuous Domain Adaptation using Optimal Transport," to appear in *OTML Workshop (NeurIPS 2019)*, Vancouver, Dec. 2019.
- **G. Ortiz-Jiménez** et al. "Sparse Sampling for Inverse Problems With Tensors," in *IEEE Transactions on Signal Processing*, vol. 67, no. 12, pp. 3272-3286, Jun. 2019.
- **G. Ortiz-Jiménez** et al. "Sampling and Reconstruction of Signals on Product Graphs", in *Proc. GlobalSIP 2018*, Anaheim, CA, USA, Nov. 2018,
- **G. Ortiz-Jiménez** et al. "Simulation Framework for a 3-D High-Resolution Imaging Radar at 300 GHz with a Scattering Model Based on Rendering Techniques", *IEEE Transactions on Terahertz Science and Technology*, vol.7, no.4, pp.404-414, July 2017.

Computer Skills

Programming languages: Python, Matlab, C and Java.
Deep learning frameworks: PyTorch, Tensorflow, CNTK.
Other tools: Git, Linux, Illustrator.

Volunteer Activities

Ongoing - Dec 2018 | **Reviewer of scientific journals**
• *IEEE Transactions on Signal Processing*
• *EURASIP Journal on Advances in Signal Processing*

Jul 2016 - Jul 2015 | **Committee Member of the International Mentors Association**
Technical University of Madrid
• Managed the organization and activities of the international mentors for the integration of international exchange students.
• Helped international exchange students in their adaptation to a new university and lifestyle.