



Personal Profile

I am a first-year PhD researcher working at EPFL under the supervision of Prof. Pascal Frossard. In my research, I am trying to build an understanding of deep learning through the lens of adversarial perturbations.

Education

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| (Nov 2022) -
Nov 2018 | PhD. in Electrical Engineering
<i>École Polytechnique Fédérale de Lausanne (EPFL), Switzerland</i> <ul style="list-style-type: none">• Thesis topic: Local function dynamics of deep neural networks• Thesis director: Prof. Pascal Frossard |
| Aug 2018 -
Sep 2016 | M.Sc. Electrical Engineering (Best Graduate, <i>cum laude</i>)
<i>Delft University of Technology, Netherlands</i> <ul style="list-style-type: none">• 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)
<i>Universidad Politécnica de Madrid, Spain</i> <ul style="list-style-type: none">• Erasmus Exchange (2014-2015) at <i>Vienna University of Technology, Austria</i>• Bachelor Thesis: Overcomplete dictionary learning for sparse representation of images |
| Ongoing -
Sep 2017 | B.Sc. in Physics
<i>Universidad Nacional de Educación a Distancia, Spain</i>
Distance learning (3rd year) |

Work and Research Experience

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| Aug 2018 -
Nov 2017 | Doctoral Assistant
<i>Signal Processing Laboratory. École Polytechnique Fédérale de Lausanne</i> <ul style="list-style-type: none">• Studying adversarial perturbations and the mechanisms that lead deep networks to be so susceptible to them.• Teaching assistant of <i>Computational optimal transport</i> and <i>A network tour of data science</i>.• Supervising multiple master students. |
| Aug 2018 -
Nov 2017 | Master Thesis
<i>Circuits and Systems Group. Delft University of Technology</i> <ul style="list-style-type: none">• Defined a new type of graph convolutional layer for deep learning on multidomain graphs.• Design near-optimal sample selection algorithms for tensor data.• Applications in recommender systems, EEG classification, fake news detection, traffic prediction, etc. |
| Oct 2017 -
Jul 2017 | Research Intern
<i>Philips Research Hamburg, Germany</i> <ul style="list-style-type: none">• Involved in different projects related to computational medical imaging and fetal ultrasound• In charge of the development of different self-supervised deep learning algorithms for representation learning and medical image reconstruction. |
| Jul 2016 -
Sep 2015 | Research Assistant
<i>Microwaves and Radar Group. Technical University of Madrid</i> <ul style="list-style-type: none">• Developed a complete electromagnetic simulator using 3D rendering techniques from computer graphics to accurately model the scattering from the human skin at the submillimeter band. |

Languages

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

Scholarships and Awards

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|------------------------|--|
| Dec 2018 | National Award for Excellence in Academic Performance (2nd Prize)
<i>Ministry of Education of Spain</i> <ul style="list-style-type: none">• Most prestigious award granted by the Government of Spain to students in all academic fields that showed an outstanding accomplishment during their undergraduate studies. |
| Nov 2018 | Best Graduate
<i>Delft University of Technology</i> <ul style="list-style-type: none">• Best graduate of all master programmes of the Faculty of Electrical Engineering, Mathematics and Computer Science. |
| Sep 2018 | IEEE SPS Travel Grant
<i>IEEE Signal Processing Society</i> <ul style="list-style-type: none">• Grant awarded on a highly competitive basis to support my travel costs to IEEE GlobalSIP 2018 in Anaheim, CA, USA. |
| Aug 2018 -
Sep 2016 | “La Caixa” Postgraduate Fellowship
<i>La Caixa Bank Foundation</i> <ul style="list-style-type: none">• One of the most prestigious postgraduate fellowships in Spain.• It provided complete funding of my master studies. |
| Jan 2016 | UPM-Caja Ingenieros Award 2016
<i>Technical University of Madrid & Caja Ingenieros Savings Bank</i> <ul style="list-style-type: none">• Best graduate among all degrees related to information and communications technologies at UPM. |
| May 2016 -
Oct 2015 | Departmental Collaboration Scholarship
<i>Ministry of Education of Spain</i> <ul style="list-style-type: none">• Monthly allowance for university interns working on promising research projects. |
| Oct 2015 | Best Graduate (Valedictorian)
<i>School of Telecommunications. Technical University of Madrid</i> <ul style="list-style-type: none">• Top student of the Faculty of Telecommunications. |
| 2015-
2012 | Academic Excellence Scholarship
<i>Autonomous Community of Madrid</i> <ul style="list-style-type: none">• Yearly allowance to the top undergraduate students in Madrid. |

Computer Skills

Programming languages: Python, Matlab, C and Java.
Important libraries: PyTorch, Tensorflow, Scikit-learn, Pandas, Scipy/Numpy.
Other tools: Git, Linux, Illustrator.

Publications

- **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, June 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.

Volunteer Activities

Ongoing - Dec 2018	Reviewer of scientific journals <ul style="list-style-type: none"> • <i>EURASIP Journal on Advances in Signal Processing</i>
Jul 2016 - Jul 2015	Committee Member of the International Mentors Association <i>Technical University of Madrid</i> <ul style="list-style-type: none"> • 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.