Fabiola Espinoza Castellon

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Fabiola Espinoza Castellon

Experience

2020 – 2024 (3 years and 3 months)
PhD, Computer Science, *CEA List*, Saclay, France.
- Title "Contributions to effective and secure federated learning with client data heterogeneity".
- Contributions:
  - Mitigating client-data heterogeneity by clustering model updates based on incremental similarity.
  - Domain adaptation in a federated context using optimal transport.
  - Defense against backdoor attacks by estimating the attack trigger.
- Conference papers presented at IJCNN 2022, IEEE TPS-ISA 2023, GRETSI 2023, ICASSP 2024.
- Skills: Federated learning, computer vision, image classification, state-of-the-art methods reproduction, Python (Pytorch), GPU/CUDA, Slurm workload manager, scientific writing and public speaking.

2020 – 2020 (6 months)
Research intern, *Electricité De France R&D*, Saclay, France.
- Forecast of EDF's wind power production with deep learning.
- 2D long-term meteorological data, time series.
- Skills: Conv-RNNs/LSTMs for regression, Python (tensorflow/keras), research.

2019 – 2019 (3 months)
Research intern, *United Nations Pulse Lab*, Jakarta, Indonesia.
- Estimation of electricity access in Indonesia.
- Remote sensing data (satellite images), ground truth data (official statistics) and open data.
- Skills: Python (pandas), GDAL, ArqGIS, data visualization (Ploty), communication.

Education

2020–2024
Ph.D., Computer Science, *Université Paris-Saclay*, Saclay, France.
- Publications and reviews in international conferences.
- Courses conception/teacher assistant for undergraduate and graduate levels at Telecom SudParis, INSTN and IUT de Sceaux.

2017–2020
M.Eng specialized in Artificial Intelligence, *Télécom SudParis*, Evry, France.
- Degree jointly with Telecom Paris and ENSTA Paris.
- Machine and Deep Learning, Natural Language Processing.

2015–2017
Preparatory classes in Maths/Physics section, *Lycée Thiers*, Marseille, France.
Preparation for competitive entrance exams leading to French engineering schools.

Academic achievements and recognitions

2024 **G-Research quantitative research grant**, grant for early career researchers.

2023 **Best Paper Award**, IEEE Trust, Privacy and Security in Intelligent Systems and Applications.

2015 – 2020 **Bourse Excellence-Major**, 5-year scholarship awarded based on high school academic excellence.

Skills

Projects: Python, PyTorch, Tensorflow, Keras, Scikit-Learn, Numpy, Pandas, LaTeX, Git, Bash, GPU allocation, Slurm (workload manager).

Course: Java, C, SQL, LLMs

Languages

Fluent: Spanish (mother-tongue), French, English | Intermediate: Portuguese