ESTELLE DELOUCHE

Data Scientist - ML Engineer

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EXPERIENCE

Post-doc
Time-series recognition and Prediction

📅 June-2023 – November 2023   📍 ISTerre, Grenoble, France

- Development of Machine Learning algorithms (Supervised and Unsupervised techniques) to separate and locate volcanic tremor sources (Python, Tensorflow)
- Determination of the long-term evolution of water resources at European scale (Python, Matlab)

PhD
Big Data and Software Development

📅 Sept 2019 – June 2023   📍 ISTerre, Grenoble, France

- Creation of signal processing software in Python and Matlab
- Software development to model and predict the water fluctuations inside aquifer systems
- Performing a wave sensitivity study at depth using 'Surf96'
- Big Data management: GPS, Satellite (GRACE), precipitation and seismic data at European scale
- Supporting global RISE project for real-time earthquake risk reduction
- Presentations and reports writing

Master Internship
Image recognition with ML

📅 Jan 2019 – July 2019   📍 ISTerre, Grenoble, France

- Creation of a machine learning-based automated system to discriminate the resting, precursory and post-seismic phases of an earthquake
- Time series and image recognition

Master Internship
Statistical study of earthquake signal

📅 May 2018 – June 2018   📍 ISTerre, Grenoble, France

- Characterization of the co-seismic impact of noise recordings for l'Aquila and Amatrice earthquakes using statistical moments

PUBLICATIONS

📄 Journal Articles

- **E. Delouche** and L. Stehly, "Long-term velocity variations in Italy related to aquifer system," *in preparation*, 2023.
- **E. Delouche** and L. Stehly, "Seasonal seismic velocity variations measured using seismic noise autocorrelations to monitor the dynamic of aquifers in Greece," *Solid Earth*, 2023.
- L. Stehly, **E. Delouche**, L. Tomasetto, and P. Ranjan, "Dynamic of seismic noise sources in the mediterranean sea : Implication for monitoring using noise correlations," *Comptes Rendus de l'Académie des Sciences*, 2023.

SKILLS SUMMARY

🧠 **Data**
Signal processing, Kernel sensitivity, Machine Learning, Seismology

Languages
Matlab, Python, Tensorflow, Bash, Latex, Java, Excel

🐧 **Platforms**
Linux, Windows

SOFTS SKILLS

Achiever   Teamwork
Time management   Public speaking

LANGUAGES

English
Spanish
French (native)

EDUCATION

Master
Grenoble Alpes University - Isterre

📅 Sept 2017 – June 2019

Courses: Signal processing, Data analysis, Wave physics, Problem-solving, Statistics

Licence
Nice University - Géoazur

📅 Sept 2014 – June 2017

Courses: Geophysics, Mathematics, Physics, Algebra, Thermodynamics, Analysis, Mechanics

CONFERENCES

👥 International Conferences

- AGU conferences, 1st author, San Francisco, New Orleans, 2019, 2021.
- EGU conferences, 1st author, Vienna, 2020, 2021, 2022, 2023.
- Summer school, 1st author, Cargese, 2019, 2022.

HOBBIES

Running, Trail, Latin Dances (Salsa, Bachata), Detective fiction, Cooking