Jules Rio

PhD student (third year)

April 15, 1995

Saint-Étienne, FRANCE

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Languages

- German ● ● ● ○ ○
  - Goethe-Institut B2
- English ● ● ● ● ●
  - TOEIC 860, expired
- French ● ● ● ● ●
  - Native speaker

I.T. Skills

- Python ● ● ● ● ●
  - Used daily
- Matlab ● ● ● ● ○
  - Regularly used
- Latex ● ● ● ● ○
  - Regularly used
- C, C++ ● ● ● ○ ○
  - Knowledge
- R ● ● ○ ○ ○
  - Basic knowledge
- SQL ● ○ ○ ○ ○
  - Notions

Extra-curricular

- Violin
  - Played for 15 years
- Kung-Fu
  - Yellow Belt

Working Experience

Dec. 2018 - Today — **PhD : signal processing** — *Hubert Curien Laboratory (University of Lyon)*

Title : *Analysis of cyclostationary signals based on deep learning methodologies*

- Denoising of periodic signals containing discontinuities
- Using Deep Learning models for denoising the signals (implementation with Tensorflow)
- Researching metohds for improving the consideration of the periodicity and the generalization to various noises in Deep Learning
- Using Matlab for pre-analysis of the real signals
- Financed by the 'Investissements d'Avenir' program operated by the ADEME (IMOTEP project)

Apr. 2018 - Oct. 2018 — **Last year internship** — *Sony European Technology Center*

- Used Deep Learning for audio classification, such as in DCASE 2018 Task 5 (Monitoring of domestic activities based on multi-channel acoustics)
- Used Nnabla to implement the neural networks in Python

May. 2017 - Aug. 2017 — **Internship** — *Thales Air Systems*

- Data analysis to improve the system of detection of degradations
- Searched Data analysis methods that would be the most usefull for the project

Oct. 2015 - Aug. 2016 — **Humanitarian association** — *Recup'Eau Vietnam*

- Worked to help a village in Vietnam by building some new amenities
- Collected fundings and contributed to the on-site building (one month)

Teaching

2019 - 2021 : Télécom Saint-Étienne

Mathematics (L3) → 15h : Reminders with a focus on probabilities and integration
→ 1 group in 2019 and 2020

Discrete signals (L3) → 15h : Fourier and Z transforms, LTI, FIR and IIR systems
→ 2 groups in 2019, 1 group in 2020 and 2021

Random signals (L3) → 16.5h : Autocorrelation, stationarity, white noises
→ 1 group in 2019, 2020 and 2021

Estimation (M1) → 16.5h : Estimation theory (bias, variance, classic methods)
→ 1 group in 2019 and 2020

Education

Sep. 2015 - Oct. 2018 — **Engineer's degree (equivalent to a master's degree)** — *École Centrale de Nantes*

- Option "**Mathematics and applications**"
  Data Mining, Statistical inference, Regression and Time series
- Option "**Data analysis and applications in signal and image processing**"
  Image Processing, Machine Learning, Statistical data modelling and analyzis, Audio analysis and Information retrieval

Sep. 2013 - Jul. 2015 — **Student in Classes Préparatoires** — *Lycée Clemenceau, Nantes*

A 2-year intensive course in mathematics, physics and chemistry, preparing for the national competitive entry examinations for French Schools of Engineering

Jun. 2013 — **Baccalaureat S**

- French equivalent of High School Diploma, with a specialization in Mathematics, Physics and Biology
- Obtained with distinction

Publications

2020 — **A Wavenet for denoising periodic discontinuous signals**

Rio et Al.

European Signal Processing Conference (EUSIPCO)