TOM LABIAUSSE

PhD student in computer science @ **Kyutai & LIA, University of Avignon**

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EXPERIENCE

ML Researcher - Audio Language Modeling
KYUTAI - @Paris

📅 April 2024 – Present

- **Goal:** Build high-fidelity simultaneous speech translation models.
- Take part in the development of SOTA large multimodal models in a newly created french AI lab with substantial GPU access.

`PyTorch` `Slurm` `Neural codecs` `TTS` `Speech translation`

ML Engineer - Document Engineering internship
DOCUGAMI - @San Francisco

📅 Feb 2023 – Aug 2023

- **Goal:** Train and evaluate multimodal (text + layout) models applied to documents from various businesses (insurance, health, law...) and from different data formats (image, PDF, docx...).
- Development and training of large systems from SOTA multimodal transformers architectures for visual Question/Answering tasks.

`PyTorch` `Transformer` `Hugging Face` `Google Cloud` `Bash`

Data Scientist Junior - AI robustness research project
SYSTEMX - @CentraleSupélec

📅 Jan 2022 – June 2022

- **Goal:** Investigate the robustness of the neural network based airborne collision avoidance system named ACAS-Xu.
- Statistical study of the weaknesses of the networks with various adversarial attacks (FGSM, Carlini&Wagner, DeepFool...).

`Python` `Tensorflow` `Data visualisation` `Adversarial attacks`

ML Engineer Junior - Topic Modeling in NLP project
ONEPOINT - @CentraleSupélec

📅 Sept 2021 – Jan 2022

- **Goal:** Set up an algorithm to classify books using their 4th cover to determine their topics.
- Benchmark and finetuning of different strategies: LSA, LDA, BERTopic (DL method built on BERT architecture).

`Python` `Data cleaning` `NLP` `LDA` `BERT` `Clustering`

ML Engineer Junior - Computer Vision project using CNN
EAUX CRISTALLINES - @CentraleSupélec

📅 Nov 2020 – June 2021

- **Goal:** Set up an automated classification system of different kinds of waste from pictures.
- Understanding of CNN (VGG-16, AlexNet, ResNet...) and application of finetuning strategies.

`Python` `Tensorflow` `CNN` `Transfer Learning` `SQL`

EDUCATION

Master of Science - MVA
ENS Paris-Saclay

📅 Sept 2023 - April 2024

- MVA : Mathématiques Vision Apprentissage (Maths Vision Learning)
- **Main courses:** Mathematics - Statistics - Optimization - Computer Vision - NLP - RL - Graph ML - Time series

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General engineering studies
CentraleSupélec

📅 Sept 2020 – June 2024

- Part of Paris-Saclay University ranked 1st in mathematics by the Shanghai Ranking in 2020, 2021 & 2022.
- **Main courses:** Mathematics - Advanced statistics - Algorithmics - Machine Learning - High performance computing & distributed algorithms - Cryptology - Economy - Philosophy of science

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Preparatory class in maths/physics
Lycée Saint-Louis

📅 Sept 2018 – July 2020

- **Courses:** Algebra - Analysis - Probability theory - Physics - Algorithmics - Coding

SKILLS

- **Languages/frameworks:** Python (scikit-learn, pytorch, tensorflow/keras, Django, FastAPI...), Bash, SQL, R, C++, HTML, CSS, JavaScript, React
- **Tools:** Git, Slurm, Docker, Google Cloud, Visual Studio Code, Matlab, Latex
- French (native), English (C1), German (A2)
- Driving license since 2019

HOBBIES

- **Music:** vinyl & hard/pop/progressive rock, metal (Pink Floyd, Led Zep, RHCP...)
- **Sports:** mountain biking, swimming, tennis, running, ski, windsurfing
- **Science:** Books and videos about: Algorithmics – AI – History & Philosophy of science - Quantum physics
- **Teaching:** Mathematics & Excel for undergraduate students