Théo Gigant

Multimodal Deep Learning
PhD student

Paris, France
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gigantheo.github.io
HuggingFace: gigant

Education

2022–2025 **Université Paris-Saclay / Centrale Supélec - L2S Lab**,
Computer Science, PhD.
Representation of encoded features for extractive and abstractive summarization of multimodal content. Under the supervision of Frederic DUFAUX and Camille GUINAUDEAU

2018–2021 **Institut Polytechnique de Paris - Télécom SudParis**,
Statistical Modeling, Master of Science.
Applied Mathematics, Deep Learning

Experiences

Jul 2022–Ongoing **PhD Student**, JustAI, Paris.
CIFRE Fellowship

Jan 2022–Jun 2022 **Machine Learning Engineer**, Freelance, Paris.
- Implementing computer vision models for real world applications, teaching deep learning classes, contributing to open source projects & writing blog posts on Deep Learning topics

Jul 2021–Dec 2021 **Computer Vision Research Intern**, Huawei R&D Center, Helsinki.
Part of the Research & Development Computer Vision unit
- Developing and training deep learning models for Computer Vision and Multimodal applications
- Writing scripts for distributed training over 8 GPUs in Pytorch

Feb 2021–Jun 2021 **Machine Learning Engineer Intern**, JustAI, Paris.
- Building Proof of Concepts for applications using Deep Learning models in NLP
- Trainer for courses about Deep Learning Fundamentals for developers & AI project management

Jul 2019–Aug 2019 **Machine Learning Research Intern**, Artemis Lab, Télécom SudParis, Evry.
- Building Deep Learning algorithms for image classification
- Scrapping and assessing quality of 10k+ images datasets

Projects

Apr 2022–May 2022 **Datasets contributions [Event]**, *BigScience*, BioMedical Hackathon.
- Implementing standardized data loading scripts for 4 biomedical datasets: EU-ADR, QUAERO, CAS & ESSAI.

Apr 2022–May 2022 **WikiArt Diffusion Mini [Project]**, *HuggingFace & Paperspace*, HugGAN Sprint.
- Finetuning a CLOOB-conditioned Latent Diffusion model and training a 105M-parameters latent diffusion model using a knowledge distillation process.

Jan 2022– Feb 2022 **Romanian Speech Recognition [Model]**, *HuggingFace & OVHCloud*, Robust Speech Recognition Challenge.
- Finetuning a Wav2Vec2 model for Romanian Speech Recognition, boosted with a 5-gram language model
- Achieving top-1 on the leaderboard in Romanian, beating previous state-of-the-art with a WER of 7.31% and a CER of 2.17% on the Common Voice 8.0 benchmark

July 2021 **T5-VAE [Demo]**, *HuggingFace & Google Cloud Platform*, JAX/Flax Community Week.
- Finetuning a T5 language model as a Variational AutoEncoder, for smooth text interpolations

Publications

November 2022 **BigBIO: A Framework for Data-Centric Biomedical Natural Language Processing**, *NeurIPS 2022 Datasets and Benchmarks*.

June 2022 **Language Models' Language: Prompts & Latent Spaces [Article]**, *Weights and Biases' Fully Connected blog*.

March 2022 **Introduction to State-Of-The-Art Speech Recognition Techniques [Article]**, *Personal blog*.

Skills

Deep Learning	Graphs, Computer Vision, Natural Language Processing, Speech Recognition & Graphs
Languages	Python (JAX, PyTorch, TensorFlow, ONNX), Bash, SQL, Java
Utilities	Git, Jupyter Notebook, Anaconda, Weights&Biases, Gradio, BeautifulSoup
Spoken Languages	French (native), English (Full professional proficiency : 990/990 TOEIC)

Certifications

Jul 2022 **Effective MLOps - Model Development [Certificate]**, *Weights & Biases*.

Mar 2022 **Introduction to JAX and Deep Learning [Certificate]**, *Educative.io*.
Learn the basics of the Deep Learning framework JAX and its ecosystem of libraries (Haiku, Jraph, Chex, Flax, Optax) for linear algebra, random variables theory, pseudo-random number generation, and optimization algorithms.

Oct 2020 **GAN Specialization [Certificate]**, *DeepLearning.ai*.
3 courses, 10 weeks specialization to learn state-of-the-art deep learning techniques to build GAN models