Valentin Gerard

Master's degree Matematics, Vision, Learning (MVA)
École normale supérieure Paris-Saclay (University Paris-Saclay)
École des Mines de Nancy

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Seeking for a research internship (5-6 months) starting from April 2024 in the field of Computer Vision or Natural Language Processing.

EXPERIENCE

- **Institut FEMTO-ST, Computer Science Department** *June 2023 - September 2023*

  Deep Learning Research Intern Belfort, France

  Designed and trained a model for the automated detection of R-waves in highly noisy electrocardiograms (ECGs). To address this challenge, we introduced artificial noise into our training dataset, which originally comprised clear ECGs and we evaluated the performance of our model using highly noisy ECG data provided by Dijon Hospital. I employed models designed to process the ECG through its time-frequency representation. Then, I leveraged a Transformer model that combines information from both the time-frequency representation and the time series data of ECGs.

- **National Institute for Research in Digital Science and Technology (INRIA)** *September 2022 - June 2023*

  Deep Learning Research Intern, MULTISPEECH Team Nancy, France

  Designed and trained more efficient neural network architectures for audiovisual speech generative modeling using variational autoencoders. Speech perception involves both the acoustic modality and the visual modality, specifically the lip movements of the speaker. We focused on an encoder to encode the input signal using both speech modalities into a latent representation, and a decoder to reconstruct the input signal from the latent representation. I delved into exploring Transformer based models to capture temporal dependencies within the signal.

- **LISI Automotive** *January 2022 - February 2022*

  Factory Operator Intern Delle, France

  Worked on automatic sorting machines for assembly solutions in the automotive industry. Observed challenges in applying computer vision on a production line.

EDUCATION

- **Ecole Normale Supérieur Paris-Saclay (University Paris-Saclay)** *2023-2024*

  Master's degree Mathématiques, Vision, Apprentissage (MVA) Paris, France

  Selected Courses: Advanced learning for text and graph , Algorithms for speech and NLP, Object Recognition, Image denoising, Generative Models for Image, Digital imaging, Deformable models and geodesic methods for image analysis, Deep learning for medical imaging, Inverse problems and imaging ,Geometric data analysis, Convex optimization

- **École des Mines de Nancy** *2021-2024*

  Ingénieur Civil des Mines, Master of Science Nancy, France

  Notable Courses: Machine Learning, Deep Learning, Image Processing, Data Analysis, Time Series, Optimization, Probability, Statistics, Monte Carlo Method, Inverse Problems, Database, Software Engineering, Programming and Data Structure, Algorithms and Complexity, Statistical Physics, Project Management

- **Classe préparatoire au Grandes Ecoles - Lycée Kleber** *2019-2021*

  Undergraduate studies to prepare for competitive nationwide entry exams to engineering schools Strasbourg, France

  Intensive courses for two years in mathematics, physics, computer science and engineering

AWARDS

- **Academic excellence scholarship for MVA given by Paris Artificial Intelligence Research Institute** *2023-2024*

TECHNICAL SKILLS

Programming Languages: Python, SQL, R, MATLAB
Python Libraries: PyTorch, TensorFlow, Pandas, Numpy, Matplotlib
Cloud Computing: Google Cloud
Other: LaTeX, Git, ChatGPT

LANGUAGES

French: Mother Tongue | **English**: C1 TOEIC and IELTS | **German**: B1 Goethe Zertifikat | **Italian**: B1

HOBBIES AND INTERESTS

- **Football:** Manager of Mines Nancy football team (2022-2023) and US-Bavans U11(2018-2019).
- **AI :** I attend conferences, read papers, follow the release of models and use SF to think about the impact of AI

ADDITIONAL CERTIFICATIONS

- **Workplace First Aid formation,** INRS, Nancy *2022*
- **Online Course in Project Management,** École Centrale de Lille, France *2021*