Julien Gaubil

Machine Learning Student – École Normale Supérieure Paris-Saclay

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Research interests

I have great interest in research in **Deep Learning and Computer Vision**, topics that I've tackled during my past research experiences. I am looking for a **PhD** in this field, and I am particularly interested in building explainable methods using **less supervision or data**.

Research Experience

Computer Vision Research intern – École des Ponts ParisTech (ENPC)
Apr. 2022 – Sep. 2022

5-month internship in the Imagine team on **weakly-supervised Deep Learning methods for text-line recognition**.

- Adding weak supervision in existing unsupervised method from Dr. N. Gonthier & Y. Siglidis,
- Improving modelling of rare characters which improves quantitative evaluation on various datasets,
- **Submission of our work at CVPR23**, listed as 2nd co-author.

Advisor: **Prof. M. Aubry**, *Associate Professor at ENPC, Department of Computer Science*. (Website)

Computer Vision Research intern – French National Center of Scientific Research (CNRS)
May - Aug. 2021

3-month internship on the Robotics project Chiron, in the LIRIS team in charge of the **Visual Scene Understanding**.

- 40 pages literature report over ML algorithms for Object detection/Pose Estimation,
- Reproducing the results of the most appropriate method (FS-Net) for real-time applications.

Advisor: **Prof. E. Dellandrea**, *Associate Professor at École Centrale de Lyon, Department of Computer Science*.

Education

MSc, Mathematics, Vision, Learning (MVA) – École Normale Supérieure Paris-Saclay
2022 – 2023

École Normale Supérieure is the most prestigious French academic institution for future researchers. The MSc MVA is highly selective and is the French leading research master in **Machine Learning and Computer Vision**. Relevant courses:

First term: Object recognition & Computer Vision (I. Laptev, C. Schmid, J. Ponce, J. Sivic), Deep Learning (V. Lepetit), 3D Computer Vision (P. Monasse, M. Aubry), Learning for Text and Graphs (M. Vazirgiannis), Convex Optimization (A. d'Aspremont).

Second term: Information & Complexity (S. Mallat), Kernel methods for ML (J. Mairal), Point clouds & 3D modelling.

MSc in Engineering – École Centrale de Lyon
2019 – 2022

École Centrale de Lyon is one of the top French 'Grande Écoles'. Majored in Applied Mathematics.

Relevant courses: Machine Learning, Advanced Learning: convexity & sparsity, C++, Inverse problems & Imaging, Probabilities & Stochastic Processes, Intensive scientific computation, Statistics in High Dimension, Mathematics for Images. Rank in elective courses: **top 10%**, grade: **15/20**, merit: **Excellent**.

Double curriculums in Applied Mathematics with Lyon 1 University:
MSc Research Master MeA in Applied Mathematics, track Vision, Image & Learning. Grade: **15.4/20**. 2021 – 2022
BSc General Mathematics, grade: **14.3/20**, rank 13/54 among students in double-curriculum. 2020 – 2021

Preparatory classes – Lycée Marcelin Berthelot
2017 — 2019

Intensive two-year undergraduate course preparing for the nation-wide entrance examinations of the top French 'Grandes Écoles'. Majored in Mathematics and Physics.

Academic Projects

Research project on Incremental Deep Learning
Sep. 2020 – Apr. 2021

Research project on Incremental Deep Learning advised by Pr. E. Dellandrea (CNRS LIRIS).

- Literature review over Incremental Deep Learning: 50 pages report,
- Reproduction and proposition of an improvement of a fundamental method in Incremental Learning (GEM).

Other Academic projects

Sparse variable selection in Lasso with Knockoffs. Advisor: Pr. Y. de Castro (Institut Camille Jordan). Jan. 2022 - Apr. 2022

Analysis of football data games. Advisor: Pr. R. Vuillemot (CNRS LIRIS). Sep. 2020 - Jun. 2021

Courses projects on Variational Networks, Scattering Convolution Networks.

Miscellaneous

Computer Science: Python (proficient, experience with PyTorch, NumPy, Pandas...), C++, R, Matlab, SQL, GIT.
Languages: English (proficient, C2) TOEFL 105/120, French (Native), Spanish (intermediate).
Interests: Reading (Novel, Sci-Fi), Mathematics, Sports (Football, Handball).

Referees

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