Tom Huix

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Education

École Polytechnique (CMAP) Palaiseau, France
PhD student supervised by Eric Moulines, Alain Durmus and Anna Korba. Working on contextual bandit with Thompson Sampling and Bayesian Neural Networks. *2021 – 2024*

ENS Paris Saclay / MVA master (Mathematics, Vision and Learning) Gif-sur-Yvette, France
Master of science specialized in computer vision, applied mathematics and machine learning. *2020 – 2021*

Relevant courses:

Deep Learning V. LEPETIT

Image Denoizing: the human machine competition J-M Morel, G. FACCIOLO, P. ARIAS

Probabilistic Graphical Model P. LATOUCHE, N. CHOPIN

Deep Learning in practice G. CHARPIAT

Bayesian Machine Learning R. BARDENET, J. ARBEL

Graphs in Machine Learning D. CALANDRIELLO

Sparse Representation S. MALLAT

CentraleSupélec, Engineering School Gif-sur-Yvette, France
One of the top French Engineering School, with a specialization in Machine Learning *2017 – 2021*

Michel Montaigne, Preparatory classes for the French "Grandes Ecoles" Bordeaux, France
Intensive preparation in Math and Physics for the highly competitive entrance exams to the French Grandes écoles. *2015 – 2017*

Experience

Research intern (6 months internship) Apr. 2021 – Sep. 2021
Huawei *Paris*

- Worked on Neural Networks with binary weights called Binary Neural Networks. Developed a new technique for the training of these algorithms, which allows to reduce the memory consumption during both the training and the forward pass.

Data Scientist (6 months internship) Jan. 2020 – July 2020
Upskills *Singapore*

- Developed a financial emails classifier (based on BERT algorithm) for one of the largest asian Bank.
- Designed an unsupervised email labeler (based on Sentence-BERT algorithm). Worked on financial email clustering.

Data Scientist (6 months internship) July 2019 – Dec. 2019
BeSport *Paris, France*

- Developed a text classifier for sport articles (based on LSTM network) for a social network called BeSport

Research paper

- T. Huix, S. Majewski, A. Durmus, E. Moulines and A. Korba. **Variational Inference for Overparametrized Bayesian Neural Networks: a Theoretical and Empirical Study**. Submitted, 2024.

- T. Huix, M. Zhang and A. Durmus. **Tight Regret and Complexity Bounds for Thompson Sampling via Langevin Monte Carlo**. Artificial Intelligence and Statistics (AISTATS) 2023.

- T. Huix, P. Clavier, A. Durmus. **VITS : Variational Inference Thomson Sampling for contextual bandits**. Submitted 2024.
- A. Descours, T. Huix, B. Nectoux, A. Guillin, E. Moulines, and M. Michel. **Law of Large Numbers for Bayesian two-layer Neural Network trained with Variational Inference**. Accepted at Conference on Learning Theory (COLT) 2023.
- T. Huix, A. Korba, A. Durmus, E. Moulines. **Theoretical Guarantees for Variational Inference with Fixed-Variance Mixture of Gaussians**. Submitted 2024.
- A. Descours, T. Huix, B. Nectoux, A. Guillin, E. Moulines, and M. Michel. **Central Limit Theorem for Bayesian Neural Networks trained with Variational Inference**. Submitted 2024.

Reviewing

- Neural Information Processing System (NeurIPS)
- International Conference of Machine Learning (ICML)
- Artifical Intelligence and Statistics (AISTATS)

Skills

- **Software proficiency**: Latex, Slurm, Git
- **Programming language**: Python, C++, Java, Caml
- **Deep Learning Stack**: Jax, Pytorch, Pytorch Lightning, WandB

Languages

French: Native
English: Fluent