Antoine **Wehenkel**

PH.D. CANDIDATE · MACHINE LEARNING

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PERSONAL STATEMENT

"We know the past but cannot control it. We control the future but cannot know it." Claude Shannon

In 2018, I was graduated in Computer Engineering (MSc) from **University of Liège (ULiège)**. I spent my last year of study at **Ecole Polytechnique Fédérale de Lausanne (EPFL)** as an exchange student. There, I did my **Master's thesis** in the laboratory of Prof. **Jean-Yves Le Boudec** on the parameter estimation of electrical distribution lines. I am now a **Ph.D. student (FNRS Research Fellowship)** in machine learning at ULiège under the supervision of Prof. **Gilles Louppe**. In my research, I wish to advance **simulation-based inference** by exploring new means for implementing more effectively inductive bias into **deep generative models**.

My main research interests are in generative modeling, causal models and simulation-based inference.

PUBLICATIONS & AWARDS

Selected publications

- "Neural Empirical Bayes without Likelihoods." *Submitted.*
  Vandegar M, Kagan M, Wehenkel A, Louppe G.
- "Lightning Gravitational Wave Parameter Inference through Neural Amortization." *Submitted.*
  Delaunoy A, Wehenkel A, Hinderer T, Nissanke S, Weniger C, Williamson A, Louppe G.
- "Graphical Normalizing Flows." *Submitted, preprint arxiv:2006.02548.*
  Wehenkel A, Louppe G
- "You say Normalizing Flows I see Bayesian Networks." *INNF+ @ ICML. 2020.* (**Spotlight**)
  Wehenkel A, Louppe G.
- "Unconstrained monotonic neural networks." *Advances in Neural Information Processing Systems. 2019.*
  Wehenkel A, Louppe G.
- "Parameter Estimation or Three Phase Untransposed Short Transmission Lines from Synchrophasor Measurements." *IEEE Transactions on Instrumentation and Measurement. 2020 Jan 23.*
  Wehenkel A, Mukhopadhyay A, Le Boudec JY, Paolone M.
- "Recurrent machines for likelihood-free inference." *MetaLearn @ NeurIPS. 2018.* (**Contributed talk)**
  Pesah A, Wehenkel A, Louppe G.

Honours & awards

- FNRS Research Fellowship (2018 - 2022)
- Best Master's thesis awards from AIM and from AILg (2018)
- Physics award for outstanding student (2013)
- Physics award at Belgian Olympiad (2012 and 2013)

EDUCATION

Oct 2018 - Present — PhD candidate in Machine Learning - *ULiège, Liège*
Deep Learning for Intractable Inverse Problems in Science

Sep 2016 - Jun 2018 — Master in Computer Engineering - *ULiège, Liège*
Summa Cum Laude - 88%

Sep 2017 - Jun 2018 — Exchange student in the Master in Data Science - *EPFL, Lausanne*
Average score: 5.8/6 - 97%

Sep 2013 - Jun 2016 — Bachelor in Engineering - *ULiège, Liège*
Magna Cum Laude - 81%

TECHNICAL SKILLS

- Proficient in Python, C and C++.
- General expertise in Optimisation, Statistics, Artificial Intelligence, Machine Learning and Deep Learning.

ADDITIONAL INFORMATION

Teaching activities

- *Current*: Deep Learning (ULiège), Introduction to Artificial Intelligence (ULiège).
- *Past*: Computer Organization (ULiège), Electric Measurements (ULiège), Data Structures and Algorithms (ULiège), Electronic 2 (EPFL).

Reviewing activities

- NeurIPS2020; ICLR2021.

Referees

- Gilles Louppe (g.louppe@uliege.be) - Ph.D. advisor.
- Michael Kagan (makagan@slac.stanford.edu) - Collaborator.
- Jean-Yves Le Boudec (jean-yves.leboudec@epfl.ch) - Master's thesis advisor.