William TROULEAU

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French citizen
Swiss B Permit
Born 28.03.1991

KEY COMPETENCES: Machine Learning • Probabilistic Modeling • Data Mining

EDUCATION

2015 – ongoing **Ph.D. Candidate** EPFL (Switzerland)
- Information & Network dynamics group (INDY), School of Computer and Communication Sciences under the supervision of Prof. Matthias Grossglauser and Prof. Patrick Thiran
- Focusing on the statistical and algorithmic aspects of **modeling**, **control** and **inference** of dynamical systems spreading over large networks; with applications on information diffusion, recommendation systems, and epidemiology.
- Research interests in Network inference, diffusion networks, point processes, epidemic control.

2009 – 2015 **B.Sc. and M.Sc. in Communication Systems** EPFL (Switzerland)
- Master thesis: User behavior modeling in video-on-demand services.

PROFESSIONAL EXPERIENCES

2014 – 2015 (10 months) **Research Internship on User Behavior Modeling** Technicolor (Los Altos, CA, USA)
- Design of a novel generative mixture model that presents a first-of-its-kind characterization of viewer behavior on video-on-demand services. From our modeling, we tackle various predictive tasks to predict future user actions (number of views, stopping time…).
- **Publication**: W. Trouleau, A. Ashkan, W. Ding, B. Eriksson. *Just One More: Modeling Binge Watching Behavior.* In Proceedings of the 22nd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD'16)

2014 – 2014 (3 months) **Research Internship on Topic Modeling** Technicolor (Paris, France)
- Design of a hierarchical topic model with Monte Carlo Markov Chain inference for legal document classification and exploratory analysis of patent portfolios.

PROJECTS

2018 **Scalable Control Algorithms for the spread of epidemics**
- Design of scalable machine learning algorithms to control the spread of epidemics. These algorithms build upon a corpus of heuristic methods and provide a novel framework with optimality guarantees.

2017 **Large scale breaking news detection on geo-tagged tweets**
- Design of a model based on Gaussian Processes to estimate and predict the general mood trend from more than 300 million tweets to detect breaking news events automatically.

2017 **Measuring the efficiency of interventions for Neglected Tropical Diseases** World Health Organization
- Project in partnership with WHO and EPFL. A Data-driven analysis to assess and predict the cost and efficiency of interventions targeting the elimination of parasitic worms.
- **Publication**: A. Montresor, W. Trouleau, D. Mupfasoni, M. Bangert, S.A. Joseph, A. Mikhailov, C. Fitzpatrick. *Preventive chemotherapy to control soil-transmitted helminthiasis averted more than 500 000 DALYs in 2015.* Transactions of The Royal Society of Tropical Medicine and Hygiene, Vol. 111, Issue 10, p. 457–463, 2017

2015 – 2016 **Inferring the structure of sparse propagation networks for the spread of epidemics**
- Design of probabilistic methods to reconstruct the diffusion network of epidemics while observing only the outcome of a stochastic process propagating over it.

SKILLS

Data science Machine learning, Optimization, Probabilistic modeling, Applied data analysis, Information theory, Statistical signal processing.

Programming Python, Spark, Matlab, Java, Bash, SQL/NoSQL, HTML/CSS, LaTeX.

LANGUAGES AND MISCELLANEA

- **French** Native language
- **English** Fluent, written and spoken
- **Spanish** Basic knowledge

- **Honors**
  - EDIC Fellowship, EPFL (2015)
  - ACM SIGKDD Student Travel Award (2016)