

Victor Kristof

Ph.D. Student in Machine Learning

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Profile

- Five-year research experience in **machine learning** and **data mining**
- Strong skills in **probabilistic modeling**, **data visualization**, and **software engineering**
- I develop **interpretable models** of voting, law-making, sports, peer-production, and human perception

Education

- 2015–2021 **Ph.D. in Machine Learning**, *Ecole Polytechnique Fédérale de Lausanne (EPFL)*, Switzerland.
(expected) ○ Advised by Prof. Patrick Thiran and Prof. Matthias Grossglauser in the *Information and Network Dynamics Lab*
○ Research topics: Discrete Choice Models, Latent Factor Models, Gaussian Processes, Graph Mining, Text Mining
- 2017 & 2018 **Visiting Ph.D. Student**, *Columbia University*, New York City, USA.
(4 months) ○ Visited Prof. Augustin Chaintreau in the *Mobile Social Lab* during the Summer
- 2009–2015 **B.Sc. and M.Sc. in Communication Systems**, *EPFL*, Switzerland.
○ **GPA: 5.47/6** (Ranking: 3/53)
○ Master Thesis: *Mining and Modeling Real-Time Communications to Enable Smarter Business Interactions*
- 2011–2012 **Exchange Year**, *Tecnológico de Monterrey*, Mexico.

Projects

- 2019–2021 **Climpact**, www.climpact.ch.
○ Designed a Bayesian model to estimate people's perception of their carbon footprint from pairwise comparisons
- 2016–2021 **Kickoff.ai**, www.kickoff.ai.
○ Designed a Bayesian model to predict the outcomes of soccer matches outperforming the betting odds
○ Developed a web platform to provide predictions for the top-5 European leagues (featured in the media)
- 2014–2021 **Predikon**, www.predikon.ch.
○ Designed a statistical model able to predict voting results with less than 1% error
○ Developed a web platform for visualizing voting patterns and predicting voting results (featured in the media)
- 2014 **Sezam**, www.sezam.ch.
○ Developed an iOS application (Objective-C) to help users manage entrance-door codes
○ Application downloaded by Mom, Dad, and 3000+ other people

Professional Experience

- 2015 **Data Scientist Intern**, *Interact.io*, Berlin.
(6 months) ○ Designed a classifier (96% accuracy) to discriminate human-created emails from automatically generated ones
○ Integrated into a web application and deployed to production (Python, HTML/CSS, JavaScript)
- 2013–2014 **Mac OS X Developer**, *Pryv*, Lausanne.
(20 months) ○ Developed a macOS application to enable users to upload their data to the company service (Objective-C)
- 2012 **Web Developer**, *AVNTK*, Guadalajara.
(6 months) ○ Increased traffic by 150% by adapting their translation tool (from English to Basic English) into a web application

Skills

Data Science Stochastic Optimization, Representation Learning, Active Learning, Bayesian Statistics, Databases
Programming Python, Torch, TensorFlow, Objective-C, Java, Scala, JavaScript, HTML/CSS, Bash, LaTeX, SQL, Vim

Other Commitments & Interests

- Association **President**, *Swiss Youth for Climate*.
○ Active board member for four years in a 250-member NGO advocating and raising awareness on climate change
○ Raised \$100,000. Organized and presented at conferences for 100+ persons. Managed groups of 5 to 15 people.
○ Participated in the UN conference on climate change (COP22 and COP24) as delegate and civil-society observer
○ Increased members by 85% and supporters by 140% during two years of Presidency
- Grants ○ Google and Microsoft Travel Grant for the *Climate Change AI Workshop* at NeurIPS 2019
○ EPFL Tech Transfer Office Grant (\$15,000) to develop Kickoff.ai
- Services ○ Co-organizer of the “AI & Democracy” Track at Applied Machine Learning Days 2021.
○ Reviewer for AAAI 2020. Member of the faculty teaching committee. Webmaster for my lab website.
- Sports I played soccer for 14 years. I ran a 32-kilometer trail and two half-marathons. Now, I bike and sail.
- Languages **French** (mother tongue), **English** (fluent), **Spanish** (fluent), and **German** (good knowledge)

Publications

I am the first or co-first author in all publications.

- WWW 2021 **Enriched Models for Legislative Edit Prediction**
V. Kristof, A. Suresh, M. Grossglauser, P. Thiran
- KDD 2020 **Sub-Matrix Factorization for Real-Time Vote Prediction**
A. Immer, V. Kristof, M. Grossglauser, P. Thiran
Oral presentation with 5% acceptance rate
- WWW 2020 **War of Words: The Competitive Dynamics of Legislative Processes**
V. Kristof, M. Grossglauser, P. Thiran
- CCAI 2019 **A User Study of Perceived Carbon Footprint**
V. Kristof, V. Quelquejay, R. Zbinden, L. Maystre, M. Grossglauser, P. Thiran
Climate Change AI Workshop (NeurIPS 2019)
- KDD 2019 **Pairwise Comparisons with Flexible Time-Dynamics**
L. Maystre, V. Kristof, M. Grossglauser
Oral presentation with 10% acceptance rate
- KDD 2018 **Can Who-Edits-What Predict Edit Survival?**
B. Yardim, V. Kristof, L. Maystre, M. Grossglauser
Oral presentation with 10% acceptance rate
- MLSA 2016 **The Player Kernel: Learning Team Strengths Based on Implicit Player Contributions**
L. Maystre, V. Kristof, A. J. González Ferrer, M. Grossglauser
Machine Learning and Data Mining for Sports Analytics Workshop (ECML-PKDD 2016)

Teaching

I was a teaching assistant for the following classes.

- 2017–2021 **Stochastic Models for Communication Systems** (Bachelor)
- 2019 **Probability and Statistics** (Bachelor)
- 2017–2018 **Internet Analytics** (Bachelor)
- 2015–2017 **Machine Learning** (Master)

Student Projects Supervision

- 2021 **Lawgit: An Interactive Tool to Visualize the Amendment Process in the European Union**
Max Stieber (Master)
- 2021 **Understanding the Dynamics of Delegations to International Climate Negotiations**
Jan Linder (Bachelor)
Manuscript in preparation
- 2021 **Who Makes Law? Understanding the Structure of Lobbying in Brussels**
Antoine Magron (Bachelor), co-supervised with Aswin Suresh
- 2020–2021 **The Carbon Footprint of a Swiss Citizen**
Alexis Barrou, Edouard Catting, and Blanche Dalimier (Master), co-supervised with Dr. Jérôme Payet
- 2020 **Mining Party Interventions to International Climate Negotiations**
Tatiana Cogne (Bachelor)
Manuscript in preparation
- 2019 **Visualizing Voting Patterns in Switzerland**
Ragnor Comerford (Bachelor)
- 2018–2019 **Mining and Modelling Swss Referendum Votes**
Alexander Immer (Master)
Published at KDD 2020
- 2019 **A User Study of Perceived Carbon Footprint**
Valentin Quelquejay-Leclère and Robin Zbinden (Bachelor), co-supervised with Lucas Maystre
Published at the *Climate Change AI Workshop* (NeurIPS 2019)
- 2018 **Linear Models for Legislative Edit Predictions**
Guillaume Mollard (Master)
- 2018 **Graph Embedding for Hybrid Networks**
Khuram Javed (Master), co-supervised with Sébastien Henri
- 2018 **How Do Fake News Go Viral?**
Julie Djefal (Master), co-supervised with William Trouleau
- 2017 **Predictive Models of Edits in Peer-Production Systems**
Batuhan Yardim (Master), co-supervised with Lucas Maystre
Published at KDD 2018

- 2017 **How Do Tweets Relate to Political Polls?**
Antoine Mougeot (Bachelor), co-supervised with William Trouleau
- 2016 **Gaussian Process Classification for Predicting Football Matches**
Antonio Gonzalez Ferrer (Master), co-supervised with Lucas Maystre
Published at the *Machine Learning and Data Mining for Sports Analytics Workshop* (ECML-PKDD 2016)

Talks

- 2021 **War of Words: The Competitive Dynamics of Legislative Processes**
Annual Congress of the Swiss Political Science Association (SPSA)
- 2021 **War of Words: The Competitive Dynamics of Legislative Processes**
Chair of Governance and Regulation (Paris-Dauphine)
- 2021 **Discrete Choice Mining of Social Processes**
ETHZ Computational Social Science Lab
- 2020 **Climpact: A User Study of Perceived Carbon Footprint**
ETHZ Workshop "Data Science in Climate and Climate Impact Research"
- 2019 **Artificial Instincts: Will There Ever Come a Day When There's No Reason to Watch Sports?**
Dell Technologies "AI: Hype or Reality" Podcast
- 2018 **Who Will Win? Predicting in a Dynamic World**
SoftwareONE
- 2018 **Discrete Choice Models for Data Mining**
Invited Lecture for EPFL's *Database Systems* Course
- 2018 **Une société artificiellement intelligente**
Tribune de Genève (Opinion)
- 2017 **Data Science and Politics**
Economiesuisse

Press

- 2021 **Machine Learning is Becoming a Technology**
Geneva Solutions
- 2021 **A Journey With Predikon**
Center for Digital Trust (C4DT)
- 2020 **Predikon: Dieses Tool soll die Resultate heute exakt vorhersagen**
Nau.ch
- 2018 **Millennials, peut-on leur laisser les clés?**
Radio Télévision Suisse (RTS Infrarouge)
- 2018 **Un algorithme de l'EPFL prédit qui va remporter le Mondial de football**
Radio Télévision Suisse (RTS Le 12H30)
- 2016 **Des algorithmes pour prédire l'avenir?**
ARTE Futuremag
- 2016 **L'intelligence artificielle envahit l'Euro 2016**
Radio Télévision Suisse (RTS La Matinale)
- 2016 **Artificial intelligence predicts Euro 2016 match results**
Swissinfo
- 2016 **Euro 2016: AI 'Robot Oracle' predicts France and England wins**
Metro
- 2014 **Ebikon, la commune qui vote plus suisse que les autres**
Le Temps
- 2014 **Der Traum von «Predikon»**
Tages-Anzeiger
- 2014 **Die politische Swissminiature**
Neue Zürcher Zeitung