

# Martin Saveski

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## Research Interests

*Area* Computational Social Science  
*Methods* Social Network Analysis, Causal inference, Experimental Design, Machine Learning  
*Applications* Information Diffusion, Conversation Analysis, Political Polarization

## Education

- 09/2014 — 08/2021      Ph.D., Media Arts and Sciences  
                                 *Massachusetts Institute of Technology*
- *Advisor:* Deb Roy
  - *Thesis:* Polarization and Toxicity in Political Discourse Online
  - *Thesis committee:* Deb Roy, Dean Eckles, Lada Adamic
- 09/2011 — 09/2013      M.Sc., Data Mining and Knowledge Management, Honors  
                                 *University Pierre and Marie Curie & Polytechnic University of Catalonia*
- *Thesis:* Cold Start Recommendations: A Non-negative Matrix Factorization Approach
- 09/2007 — 06/2010      B.Sc., Computing Science, First Class Honors  
                                 *Staffordshire University*
- *Thesis:* Automatic Wordnet Construction using Machine Translation and Language Modeling

## Research Experience

- Sep 2021 —              *Stanford University*  
                                 Postdoc, Management Science & Engineering
- Jun — Aug 2019        *Facebook*  
                                 Core Data Science, Menlo Park (Internship)
- Identified and characterized users who bring people together through their posts.
- Jun — Aug 2016        *LinkedIn*  
                                 Experimentation Team, Mountain View (Internship)
- Developed experimental designs for detecting network interference in randomized experiments.
- May — Jul 2014        *Amazon*  
                                 Machine Learning Team, Berlin (Internship)
- Worked on algorithms for learning sparse ranking models.
- Feb — Aug 2013        *Yahoo! Labs*  
                                 Social Media Engagement Group, Barcelona (Internship)
- Designed algorithms for cold-start recommendations.
- Jun — Aug 2012        *Laboratory of Computer Sciences, Paris 6*  
                                 Machine Learning and Information Retrieval Research Team, Paris (Internship)
- Developed methods for blending generative and discriminative models for semi-supervised learning.
- Jan — Aug 2011        *Jožef Stefan Institute*  
                                 Department of Knowledge Technologies, Ljubljana
- Built a system for sentiment analysis of financial tweets.

## Publications

Citation statistics available on [Google Scholar](#)

\* indicates equal contribution

1. Engaging Politically Diverse Audiences on Social Media  
Martin Saveski, Doug Beeferman, David McClure, Deb Roy  
ICWSM'22: International AAAI Conference on Web and Social Media. 2022.
2. Perspective-taking to Reduce Affective Polarization on Social Media  
Martin Saveski\*, Nabeel Gillani\*, Ann Yuan, Prashanth Vijayaraghavan, Deb Roy  
ICWSM'22: International AAAI Conference on Web and Social Media. 2022.
3. The Structure of Toxic Conversations on Twitter [pdf]  
Martin Saveski, Brandon Roy, Deb Roy  
WWW'21: The Web Conference. 2021.
4. Social Catalysts: Characterizing People Who Spark Conversations Among Others [pdf]  
Martin Saveski, Farshad Kooti, Sylvia Morelli Vitousek, Carlos Diuk, Bryce Bartlett, Lada Adamic  
CSCW'21: Conference on Computer-Supported Cooperative Work and Social Computing. 2021.
5. Balanced Influence Maximization in the Presence of Homophily [pdf]  
Md Sanzeed Anwar, Martin Saveski, Deb Roy  
WSDM'21: International Conference on Web Search and Data Mining. 2021.
6. Algorithmic and Human Prediction of Success in Human Collaboration From Visual Features [pdf]  
Martin Saveski\*, Edmond Awad\*, Iyad Rahwan, Manuel Cebrian  
Nature Scientific Reports. 2021.
7. Testing for Arbitrary Interference on Experimentation Platforms [pdf]  
Jean Pouget-Abadie, Guillaume Saint-Jacques\*, Martin Saveski\*, Weitao Duan, Souvik Ghosh, Ya Xu, Edo Airoldi  
Biometrika. 2019.
8. Observational Causal Inference Using Network Information  
Yan Leng, Martin Saveski, Alex 'Sandy' Pentland, Dean Eckles  
NeurIPS'19, Workshop on Graph Representation Learning. 2019.
9. Me, My Echo Chamber, and I: Introspection on Social Media Polarization [pdf]  
Nabeel Gillani\*, Ann Yuan\*, Martin Saveski, Soroush Vosoughi, Deb Roy  
WWW'18, International Conference on the World Wide Web. 2018. (Honorable mention)
10. Detecting Network Effects: Randomizing Over Randomized Experiments [pdf]  
Martin Saveski\*, Jean Pouget-Abadie\*, Guillaume Saint-Jacques, Weitao Duan, Souvik Ghosh, Ya Xu, Edo Airoldi  
KDD'17: International Conference on Knowledge Discovery and Data Mining. 2017. (Research Track)
11. Topic Modeling in Twitter: Aggregating Tweets by Conversations [pdf]  
David Alvarez-Melis\*, Martin Saveski\*  
ICWSM'16: International AAAI Conference on Web and Social Media. 2016. (Short Paper)
12. Tracking the Yak: An Empirical Study of Yik Yak [pdf]  
Martin Saveski, Sophie Chou, Deb Roy  
ICWSM'16: International AAAI Conference on Web and Social Media. 2016. (Short Paper)
13. Human Atlas: A Tool for Mapping Social Networks [pdf]  
Martin Saveski, Eric Chu, Soroush Vosoughi, Deb Roy  
WWW'16: International Conference on the World Wide Web. 2016. (Demo)
14. One-Pass Ranking Models for Low-Latency Product Recommendations [pdf]  
Antonino Freno, Martin Saveski, Rodolphe Jenatton, Cédric Archambeau  
KDD'15: International Conference on Knowledge Discovery and Data Mining. 2015. (Industry Track)

15. Item Cold-Start Recommendations: Learning Local Collective Embeddings [\[pdf\]](#)  
**Martin Saveski**, Amin Mantrach  
*RecSys'14, ACM Conference Series on Recommender Systems. 2014.*
16. The Geography of Online News Engagement [\[pdf\]](#)  
**Martin Saveski**, Daniele Quercia, Amin Mantrach  
*Socinfo'14: International Conference on Social Informatics. 2014.*
17. Joint Semi-supervised Learning of Hidden Conditional Random Fields and Hidden Markov Models [\[pdf\]](#)  
Yann Soullard, **Martin Saveski**, Thierry Artières  
*Pattern Recognition Letters. 2013.*
18. Web Services for Stream Mining: A Stream-Based Active Learning Use Case [\[pdf\]](#)  
**Martin Saveski**, Miha Grčar  
*ECML'11, Workshop on Planning to Learn and Service-Oriented Knowledge Discovery. 2011.*
19. Automatic Construction of Wordnets by Using Machine Translation and Language Modeling [\[pdf\]](#)  
**Martin Saveski**, Igor Trajkovski  
*In Proceedings of Seventh Language Technologies Conference. 2010.*

## Professional Service

- 2018—2021 *Program Committee*, ICWSM: AAAI International Conference on Web and Social Media
- 2021 *Program Committee*, WWW: The Web Conference
- 2017—2018 *Reviewer*, CSCW: Conference on Computer-Supported Cooperative Work and Social Computing
- 2018 *Reviewer*, Journal of the Royal Statistical Society, Series A (Statistics in Society)
- 2016 *Program Committee*, Bloomberg Data For Good Exchange
- 2016 *Reviewer*, ACM Transactions on Information Systems
- 2016 *Application Reviewer*, MIT Summer Research Program
- 2015 *Reviewer*, Elsevier Computer Communications, Special Issue on Online Social Networks
- 2013 *Reviewer*, RecSys: ACM Conference on Recommender systems

## Awards

- 2021 *Best Reviewer*, ICWSM: AAAI International Conference on Web and Social Media
- 2019 *Best Reviewer*, ICWSM: AAAI International Conference on Web and Social Media
- 2018 *Paper Honorable Mention*, WWW: International Conference on the World Wide Web
- 2011—2013 *Scholarship*, European Union full scholarship for a two-year Master's Degree
- 2008—2010 *Scholarship*, Macedonian government scholarship for students with advanced achievements

## Mentorship

- Jun'18—May'19 **Sanzeed Anwar**  
*MIT Undergraduate Research Opportunities Program*
  - Developed algorithms for balanced influence maximization in the presence of homophily.

- Feb—Dec 2016 Dominik Martinez  
*MIT Undergraduate Research Opportunities Program*  
• Worked on a tool for efficiently mapping social networks.
- Jun—Aug 2015 Hayley Hinsberger  
*MIT Summer Research Program*  
• Studied the relationship between household characteristics and diffusion of microfinance using data from Banerjee et al. (Science, 2013).

## Teaching Experience

- Fall 2016 *Machine Learning, Society & Autonomy, MIT*  
Teaching Assistant
- Spring 2014 *Introduction to Social Machines: Building Systems Solutions for Social Change, MIT*  
Teaching Assistant

Updated July 19, 2021 ■