

Camelia Simoiu

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Research Interests

Behavioral cyber security, machine learning, human factors, social network analysis, computational statistics (e.g. MCMC sampling methods), social influence, survey design, criminal justice.

Education

Stanford University, USA PhD candidate, Computational Social Science	2014-present
University of Amsterdam, Netherlands MS Artificial Intelligence	2013-2014
University of Toronto, Canada BS in Applied Statistics and Economics with Highest Honors	2005–2009
Society of Actuaries (SOA) Associate of Society of Actuaries (ASA accreditation)	2006-2011

Relevant coursework

The following courses were taken at Stanford: Machine learning (CS229), Social and information networks (CS224W), Statistical modeling (STATS305), Mining massive datasets Hadoop lab (CS246H), Unsupervised learning (STATS306B), Probabilistic graphical models (CS228), Bayesian Statistics (POLISCI 450D).

Employment

Researcher, Symantec , Mountain View, CA	Summer, 2017
<ul style="list-style-type: none">Develop a machine-learning approach to identify online behaviors that increase individuals' risk of experiencing ransomware attacks.	
Researcher, Massachusetts Institute of Technology (MIT) , Cambridge, MA	Jan – June, 2013
<ul style="list-style-type: none">Study the effects of network structure on social influence and complex contagion.Identify factors that encourage effective peer-to-peer propagation of behaviour using time-dependent Cox survival models, on 1.6 million users across 2,000 large-scale corporate social networks.Work featured in <i>Pentland, Alex. Social Physics: How Good Ideas Spread-The Lessons from a New Science. Penguin, 2014.</i>	
Fellow, Eric Schmidt Data Science for Social Good , University of Chicago, IL	Summer, 2013
<ul style="list-style-type: none">Develop a supervised machine-learning approach to quantify energy savings of building retrofits.Profile usage, predict peaks, and detect anomalous patterns for energy consumption from three years of hourly energy usage data from over 6,000 commercial buildings; work presented at KDD.One of 36 fellows chosen from 500+ applicants for this three-month fellowship.	
Actuarial Consulting Analyst, Mercer , Toronto, ON	2009 – 2012
<ul style="list-style-type: none">Develop quantitative statistical and stochastic models to evaluate the financial risk exposure of health and benefit plans for companies across the financial, industrial, and energy sectors.Qualified as an Associate of Society of Actuaries (ASA) after passing 8 exams on probability, statistics, and financial mathematics.	

Publications

- At risk of ransomware: a behavioral analysis of web browsing habits. *[Work in progress]*
Camelia Simoiu, Joseph Bonneau and Sharad Goel
- Crowd Research: Open and Scalable University Laboratories. UIST 2017. *[Best Paper Honorable Mention Award]*
with Rajan Vaish, Michael Bernstein, et. al.
- A large-scale analysis of racial disparities in police stops across the United States. *[Under review]*
Emma Pierson, **Camelia Simoiu**, Cheryl Phillips, Sharad Goel, et. al.
- The Problem of Infra-marginality in Outcome Tests for Discrimination. *Annals of Applied Statistics*, 2017.
Camelia Simoiu, Sam Corbett-Davis, Sharad Goel *[voted most interesting paper on arXiv, 08/2016]*
- Investigating the Wisdom of the Crowds at Scale, ACM UIST Symposium, 2015.
Camelia Simoiu, Rajan Vajan, Sharad Goel et. al., poster with oral presentation
- Understanding and Improving Energy Consumption in Commercial Buildings, Knowledge Discovery and Data Mining conference, poster with oral presentation, 2013.
Scott Alfeld, **Camelia Simoiu**, Andrea Fernandez-Conde

Invited talks and conferences

- 2018 Algorithms for Criminal Justice Reform (talk)
Artificial Intelligence for Social Impact Speaker Series, Santa Clara University, San Jose, CA.
- 2017 *The Effects of Social Influence on Collective Intelligence* (talk)
Conference on Digital Experimentation (CODE), MIT, Cambridge, MA.
- At risk of ransomware: a behavioral approach to predicting at-risk populations using web browsing* (talk)
Symantec, San Francisco, CA.
- Modelling connectedness in cyber risk – a network perspective* (talk)
World Economic Forum Cyber Risk Quantification Workshop, San Diego, CA.
- A large-scale analysis of racial disparities in police stops across the United States* (data science workshop lead)
Investigative Reporters and Editors Conference (IRE), Phoenix, AZ.
- GREPSEC III** Workshop on computer security research, San Jose, CA. (sponsored attendance)
- 2016 *The Problem of Infra-marginality* (talk)
TEDxBeaconStreet Conference, Boston, MA.
- A large-scale analysis of racial disparities in police stops across the United States* (attended)
Computation and Journalism Conference, Stanford, CA.
- The Problem of Infra-marginality* (talk)
Joint Statistical Meetings, Chicago, IL.
- The Problem of Infra-marginality*
International Computational Social Science Conference (IC2S2), Chicago, IL.
- 2015 *Investigating collective intelligence at scale* (poster with oral presentation)
ACM UIST, Charlotte, NC.

Teaching & Leadership

Applied Statistics (MS&E 125), TA for Sharad Goel	Winter 2018
Co-organizer, “ Rethinking cybersecurity: Behavioral and economic perspectives ” <ul style="list-style-type: none">Initiated the formation of a new seminar course focused on behavioral cyber security at Stanford, in collaboration with Dan Boneh and the Stanford Cyber Initiative	Winter 2018
Social Networks - Theory, Methods, and Applications (MS&E382), TA for Noshir Contractor	Winter 2016
Founder, Data Analysis Workshop Series , University of Toronto, ON <ul style="list-style-type: none">Lead a ten-week intermediate and advanced level technical workshop for undergraduate students covering advanced data analysis techniques and Visual Basics for Applications (VBA) programming (attendance approximately 50 students).Create and develop course material, lectures, assignments, organize guest speakers.Workshop subsequently integrated into the actuarial science program at the University of Toronto.	2009 – 2012

Service

Local facilitator, Women in Data Science (WiDS) Conference, Stanford, CA.	2018
Volunteer instructor (Python algorithms workshop lead) ChickTech, San Francisco, CA.	2017
Volunteer, WISE (Women in Science and Engineering) group, Stanford, CA	2016
Local Chair, Conference for Online Social Networks (COSN), Stanford, CA.	2015
Data science lead, Aspiring Researcher Challenge, Stanford, CA.	2015
Volunteer consultant, Endeavor Volunteer Consulting for Non-Profits, Toronto, ON.	2012

Scholarships and awards

StanCon Scholarship, Stan Development Team	2017
Best Paper Honorable Mention Award, UIST	2017
Travel Grant, GREPSEC III workshop on computer security research	2017
ACCEL Fellowship, Stanford University	2016-07
Winner of the Knight News Challenge Fellowship Challenge	2015
RSA Security Scholar	2015
Stanford Graduate School of Engineering Fellowship	2014
Data Science for Social Good Fellowship, University of Chicago	2013
International Exchange Bursary, University of Toronto	2007
Blue-Lands Scholarship, University of Toronto	2006
Victoria College Regents Scholarship, University of Toronto	2006
School Champion, Cayley Contest, Canadian Mathematics Competition	2003
Placed in top 5% nationally on Pascal & Fermat Contests, Canadian Mathematics Competition	2002-04

Programming Skills

Proficient: Python, R, MySQL, Hive, MatLab, Gephi, Unix, LaTeX
Basic Knowledge: Java, Hadoop, C++

Personal

Languages: Fluent in English and Romanian (native). Conversant in French.
Amateur cello player; road biking, diving, mountaineering.