

# Aniko Hannak

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## Research Interests

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I am interested in the impacts of personalization on various web services. My current research involves measuring the extent and effects of personalization in search engines and on online purchasing sites. I am also interested in data mining and measurements on online social networks and learning new tools for analyzing large data sets.

## Education

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<b>Ph.D. Candidate, Computer Science</b>	<b>2010 – present</b>	<b>Northeastern University</b>
Advisors: Alan Mislove and David Lazer		
<b>B.S., Applied Math</b>	<b>2005 – 2010</b>	<b>Eotvos Lorand University, Hungary</b>
Advisor: Katalin Vesztergombi Thesis: Crossing Numbers and Related Problems of Unit Distances in the Plane		

## Research Projects

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<b>Measuring Price Discrimination</b>	<b>2013 – Present</b>	<b>Northeastern University</b>
In this project we are measuring the extent to which online purchasing sites vary the prices and the products they show to their customers. There are many ways in which these websites are able to influence the final purchase of users, and many factors based on which they can personalize the pool of products they offer. Our investigations include measurements on real users as well as simulations of browsing on some of the biggest e-commerce and travel sites.		
<b>Measuring Personalization of Web Search</b>	<b>2011 – 2013</b>	<b>Northeastern University</b>
We investigate the effect of personalization in Web search. The contribution of our work is three-fold; first, we develop a methodology to measure the extent of personalization, second, we apply this methodology to real-life user sessions in Google Web Search, and third, investigate the cause of personalization covering user-provided profile information, Web browser and operating system choice, search history, search-result-click history, and browsing history.		
<b>Predicting mood on Twitter</b>	<b>2010 – 2011</b>	<b>Northeastern University</b>
Understanding the influence of weather and time on aggregated sentiment from Twitter. Using our novel sentiment analysis method shaped specifically to Twitter, we treat the detection of patterns as a machine learning problem, with a goal of trying to predict the aggregate sentiment given input variables such as time of day, season, and weather.		

## Teaching Experience

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<b>Teaching Assistant</b>	<b>2011 Spring</b>	<b>Northeastern University</b>
Logic and Computation - introduction to formal logic for undergraduate students		

Discrete Structures - introductory course to mathematics, logic and computer science for undergraduates

## Professional Experience

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### Research Intern

2013

HP Labs, Social Computing Group

Mentors: Bernardo Huberman, Sitaram Asur

In this project I work on developing data mining methods to measure consumer opinions from micro-blogging data. The final product allows us to analyze tweets in a live manner, detect possible crises and have an overview on the temporal patterns of consumer sentiment.

### External Researcher

2011 - 2012

Maven Seven, Budapest, Hungary

Principal Investigator: Albert-Laszlo Barabasi

The goal of the project I was involved in at Maven7 was to map and analyze the community of Hungarians living in Boston. We achieved an extensive understanding over the communities and cultural trends by combining online data collection with the traditional data methods used in sociology and by using various social network analysis and data mining methods on the gathered data.

## Skills

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Platforms: Mac OS X, Linux

Programming Languages: Python, bash, JavaScript, HTML, PHP

Other Tools: Hadoop, Pig, Latex, Weka

Languages: Hungarian (native), English (fluent), German (fluent), Italian (beginner)

## Publications

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### Conference Papers:

A. Hannak, D. Margolin, B. Keegan, I. Webers: **Get back! You don't know me like that: The social mediation of fact-checking interventions in Twitter**, In Proceedings of the 8th International AAAI Conference on Weblogs and Social Media (ICWSM'14), Ann Arbor, MI, June 2014

A. Hannak, P. Sapiezynski, A. Molavi Kakhki, B. Krishnamurthy, D. Lazer, A. Mislove, C. Wilson: **Measuring Personalization of Web Search**, Proceedings of the 22nd International World Wide Web Conference (WWW'13), Rio de Janeiro, Brazil, May 2013

A. Hannak, E. Anderson, L. F. Barrett, S. Lehmann, A. Mislove, and M. Riedewald **Tweetin' in the Rain: Exploring societal-scale effects of weather on mood**. In Proceedings of the 6th International AAAI Conference on Weblogs and Social Media (ICWSM'12), Dublin, Ireland, June 2012

## Journal Papers:

A. Hannak, P. Sapiezynski, A. Molavi Kakhki, B. Krishnamurthy, D. Lazer, A. Mislove, C. Wilson: **Measuring Personalization of Web Search**, Transactions on the Web, Under Submission

## Posters:

Arash Molavi Kakhki, Aniko Hannak, Alan Mislove, Ravi Sundaram: Mitigating multiple identity attacks on content rating systems, SOSP 2011

A. Hannak, E. Anderson, L. Barrett, S. Lehmann, A. Mislove, M. Riedewald : Measuring and predicting sentiment on Twitter  
Presented at: CRA-W Graduate Cohort Workshop, 2012, Affective Science Meeting of the Affective Science Institute, 2011

## References

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### **Alan Mislove** (advisor)

Assistant Professor, College of Computer and Information Science, Northeastern University  
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### **David Lazer** (advisor)

Full Professor, Department of Political Science and College of Computer and Information Science, Northeastern University  
Visiting Scholar, John F. Kennedy School of Government, Harvard University  
[davelazer@gmail.com](mailto:davelazer@gmail.com)

### **Christo Wilson**

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