

Motahhare Eslami
(Motahareh Eslamimehdiabadi)

Carnegie Mellon University, School of Computer Science
Human-Computer Interaction Institute

meslami@andrew.cmu.edu
<http://motahhare.com>

APPOINTMENTS

- Assistant Professor, Carnegie Mellon University, School of Computer Science Fall 2020-Present
Human-Computer Interaction Institute (HCII) & Institute for Software Research (ISR)
 - UX Researcher, Facebook 2019-Present
 - Graduate Research Assistant, Computer Science Department, 2012-2019
University of Illinois at Urbana-Champaign
 - Research Intern, Adobe Research, San Francisco, CA Spring & Summer 2017
 - Research Intern, Max Planck Institute for Software Systems Fall 2015
 - Graduate Research Assistant, Computer Engineering Department, 2009-2012
Sharif University of Technology
 - Undergraduate Research Assistant, Computer Engineering Department, 2007-2009
Sharif University of Technology
-

EDUCATION

Ph.D., Computer Science, University of Illinois at Urbana-Champaign, Illinois, U.S. 2019
Thesis: “Participating and Designing around Algorithmic Sociotechnical Systems”
Committee: Karrie Karahalios, Christian Sandvig, Brian Bailey, Hari Sundaram, Kevin Hamilton

M.Sc., Computer Engineering, Sharif University of Technology, Tehran, Iran 2011

B.Sc., Computer Engineering, Sharif University of Technology, Tehran, Iran 2009

RESEARCH INTERESTS

My work draws on *Human-Computer Interaction*, *Social Computing* and *Data Mining* techniques to investigate users’ behavior around opaque and potentially biased algorithmic systems, redesign these systems to communicate opaque algorithmic processes to users and provide them with a more informed, fair, and engaging interaction

HONORS AND AWARDS

- **Google PhD Fellowship** 2017-2019
- **Best Reviewer Award**, International Conference on Web & Social Media (ICWSM) 2018
Awarded to the top 20 reviewers
- **Heidelberg Laureate Forum Young Researcher** 2018
A prestigious international mathematics and computer science Forum (11% acceptance rate)
- **C.W. Gear Outstanding Graduate Student Award** 2017
Awarded annually to a graduate student who has demonstrated excellence in research, Department of Computer Science at University of Illinois at Urbana-Champaign
- **Adobe PhD Fellowship Finalist** 2017

- **Saburo Muroga Endowed Fellowship** 2016
Awarded to outstanding graduate students in Computer Science, University of Illinois at Urbana-Champaign
 - **Feng Chen Memorial Award** 2016
Awarded to students who are first authors on a paper that has won a best paper award, Department of Computer Science, University of Illinois at Urbana-Champaign
 - **Facebook PhD Fellowship Finalist** 2016
 - **Selected for Rising Stars in EECS Workshop** 2015, 2016
 - **Best Paper Award, ACM CHI** 2015
 - **CS Grace Hopper Conference Scholarship, University of Illinois at Urbana-Champaign** 2014
 - **Honorable Mention in Facebook Midwest Regional Hackathon** 2013
 - **Exceptional Talent Award, M.S., Computer Engineering (IT), Sharif University of Technology** 2011
 - **3rd Rank in GPA, M.S., Computer Engineering (IT), Sharif University of Technology** 2011
 - **Exceptional Talent Award, B.S., Computer Engineering (IT), Sharif University of Technology** 2009
 - **1st rank in GPA, B.S., Computer Engineering (IT), Sharif University of Technology** 2009
-

GRANTS

- **Organizing Crowd Audits to Detect Bias in Machine Learning** *Awarded, Co-PI*
NSF Program on Fairness in Artificial Intelligence (FAI) \$1,000,000
with Jason Hong, Ken Holstein, Hong Shen, Adam Perer, and Nihar Shah 2021-2024
 - **Human-AI Collaborative Intelligence: The Roles and Interactions of Human & AI in Content Enforcement Systems** *Pending, PI*
Facebook Research \$50,000
In collaboration with Heidi Soedarmo 2021
 - **Centering Bias-Awareness in the Design of AI Systems for High-Stakes Decision-Making** *Under Review, PI*
NSF Program on Human-Centered Computing (HCC)
with John Zimmerman, Jodi Forlizzi, and Alexandra Chouldechova
 - **The AI Institute for Collaborative Assistance and Responsive Interaction for Networked Groups (AI-CARING)** *Under Review*
NSF AI Institute
With Georgia Institute of Technology, Carnegie Mellon University, Oregon State University, University of Massachusetts Lowell, and Oregon Health & Science University (OHSU)
 - **Education to Empower Youth Advocacy and Action around Inequity in AI Systems** *Under review, Co-PI*
Spencer Foundation, Racial Equity Special Research Grants
with Ken Holstein
 - **Operationalizing Stakeholders' Participation in the ML Pipeline to Combat Biased Design Choices and Improve Fairness & Ethicality** *Under Review, Co-PI*
JP Morgan Chase Faculty Research Award
with Hoda Heidari
-

PUBLICATIONS

Refereed Conference Papers

[c13] J. Asplund, **M. Eslami**, H. Sundaram, C. Sandvig and K. Karahalios. *Auditing Race and Gender Discrimination in Online Housing Markets*. Conditionally accepted at AAAI International Conference of Weblogs and Social Media (ICWSM), 2020.

[c12] **M. Eslami**, K. Vaccaro, M. K. Lee, A. Elazari Bar On, E. Gilbert, and K. Karahalios. *User Attitudes towards Algorithmic Opacity and Transparency in Online Reviewing Platforms*. ACM Conference on Human Factors in Computing Systems (CHI), 2019. [Acceptance Rate: 23.8%]

[c11] **M. Eslami**, S. R. Krishna Kumaran, C. Sandvig, K. Karahalios. *Communicating Algorithmic Process in Online Behavioral Advertising*. Proceedings of the ACM Conference on Human Factors in Computing Systems Conference (CHI), 2018. [Acceptance Rate: 26%]

[c10] K. Vaccaro, D. Huang, **M. Eslami**, C. Sandvig, K. Hamilton, and K. Karahalios. *The Illusion of Control: Placebo Effects of Control Settings*. Proceedings of the ACM Conference on Human Factors in Computing Systems Conference (CHI), 2018. [Acceptance Rate: 26%]

[c9] **M. Eslami**, K. Vaccaro, K. Karahalios, and K. Hamilton. *“Be careful; things can be worse than they appear”*: Understanding Biased Algorithms and Users’ Behavior around Them in Rating Platforms. The AAAI International Conference of Weblogs and Social Media (ICWSM), 2017. [Acceptance Rate: 14%]

[c8] J. Kulshrestha, **M. Eslami**, J. Messias, M. B. Zafar, S. Ghosh, K. Gummadi, and K. Karahalios. *Quantifying Search Bias: Investigating Sources of Bias for Political Searches in Social Media*. Proceedings of the ACM Conference on Computer Supported Cooperative Work (CSCW), 2017. [Acceptance Rate: 34.5%]

[c7] **M. Eslami**, K. Karahalios, C. Sandvig, K. Vaccaro, A. Rickman, K. Hamilton, and A. Kirlik. *First I “like” it, then I hide it: Folk Theories of Social Feeds*. Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI), 2016. [Acceptance Rate: 23.5%]

[c6] **M. Eslami**, A. Rickman, K. Vaccaro, A. Aleyasen, A. Voung, K. Karahalios, K. Hamilton, and C. Sandvig. *“I always assumed that I wasn’t really that close to [her]”*: Reasoning about Invisible Algorithms in News Feeds. Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI), 2015. [Acceptance Rate: 23%] **Best Paper Award**

[c5] **M. Eslami**, A. Aleyasen, R. Zilouchian Moghadam and K. Karahalios. *Friend Grouping Algorithms for Online Social Networks: preference, bias, and implications*. International Conference on Social Informatics (SocInfo), 2014. [Acceptance Rate: 23%]

[c4] **M. Eslami**, H. R. Rabiee, and M. Salehi. *Sampling from Diffusion Networks*. ASE and IEEE International Conference on Social Informatics, 2012. [Acceptance Rate: 11.5%]

[c3] P. Siyari, H. R. Rabiee, M. Salehi and **M. Eslami**. *Network Reconstruction under Compressive Sensing*. ASE and IEEE International Conference on Social Informatics, 2012. [Acceptance Rate: 11.5%]

[c2] **M. Eslami**, H. R. Rabiee, and M. Salehi. *Diffusion-Aware Sampling and Estimation in Information Diffusion Networks*. IEEE International Conference on Social Computing, 2012. [Acceptance Rate < 10%]

[c1] **M. Eslami**, H. R. Rabiee, and M. Salehi. *DNE: A Method for Extracting Cascaded Diffusion Networks from Social Networks*. IEEE International Conference on Social Computing, 2011. [Acceptance rate: 9.8%]

Refereed Journal Papers

[j4] J. Salminen, J. M. Santos, S. Jung, **M. Eslami**, and B. J. Jansen. *Persona Transparency: Analyzing the*

Impact of Explanations on Perceptions of Data-Driven Personas, International Journal of Human-Computer Interaction, 2019.

[j3] J. Kulshrestha, **M. Eslami**, J. Messias, M. B. Zafar, S. Ghosh, K. P. Gummadi, and K Karahalios. *Search bias quantification: investigating political bias in social media and web search*. Information Retrieval Journal, 1-40, 2018.

[j2] E. S. Hosseini, V. Esmaealzadeh, and **M. Eslami**. *A Hierarchical Sub-Chromosome Genetic Algorithm (HSC-GA) to Optimize Power Consumption and Data Communications Reliability in Wireless Sensor Networks*. Wireless Personal Communications (Springer). Vol. 80, no. 4, pp. 1579-1605, Oct. 2014.

[j1] P. Siyari, H. R. Rabiee, M. Salehi, and **M. Eslami**. *Network Reconstruction under Compressive Sensing*. ASE Human Journal. Vol.1, issue 3, pp. 130-143, 2012.

Extended Abstracts & Work-in-Progress Papers

[e7] **M. Eslami**, A. Aleyasen, K. Karahalios, K. Hamilton and C. Sandvig. *FeedVis: A Path for Exploring News Feed Curation Algorithms*. ACM Conference on Computer Supported Cooperative Work (CSCW), Demonstration Paper, 2015.

[e6] **M. Eslami**, A. Rickman, K. Vaccaro, A. Aleyasen, K. Karahalios, K. Hamilton, and C.Sandvig. *Exposure to the Invisible: Reasoning about Hidden Algorithms in the News Feed*, International Conference on Computational Social Science (*IC²S²*), 2015.

[e5] **M. Eslami**. *Exposure to the Invisible: Algorithm Awareness from the Individual to the Collective*. CSL Student Conference, University of Illinois at Urbana-Champaign, 2015.

[e4] K. Hamilton, K. Karahalios, C. Sandvig and **M. Eslami**. *A Path to Understanding the Effects of Algorithm Awareness*. Alt.Chi: Extended Abstracts of the ACM Conference on Human Factors in Computing Systems (CHI), 2014.

[e3] N. Spirin, **M. Eslami**, J. Ding, P. Jain, B. Bailey and K. Karahalios. *Searching for Design Examples with Crowdsourcing*. International World Wide Web Conference (WWW) Poster, 2014.

[e2] **M. Eslami**, A. Aleyasen, R. Zilouchian Moghadam and K. Karahalios. *Evaluation of Automated Friend Grouping in Online Social Networks*. Extended Abstracts of the ACM Conference on Human Factors in Computing Systems (CHI), 2014.

[e1] **M. Eslami**, A. Aleyasen and K. Karahalios. *Make Community Detection More Human*. The Human Computer Interaction Consortium (HCIC) Boaster, 2013.

Workshop Papers

[w3] **M. Eslami** and K. Karahalios. *Communicating the Algorithmic Self to Users*. The AAAI International Conference of Weblogs and Social Media (ICWSM), Workshop on Data Driven Persona and Human-Driven Analytics, 2018.

[w2] **M. Eslami** and K. Karahalios. *Embracing Seamfulness and Uncertainty in Designing around Hidden Algorithms*. ACM Conference on Human Factors in Computing Systems (CHI), Workshop on Designing for Uncertainty in HCI: When Does Uncertainty Help?, 2017.

[w1] **M. Eslami** and K. Karahalios. *Investigating Users' Understanding of Invisible Algorithms and Designing around It*. The AAAI International Conference of Weblogs and Social Media (ICWSM), Workshop on Studying User Perceptions and Experiences with Algorithms, 2017.

Doctoral Colloquium

[d1] **M. Eslami**. *Understanding and Designing around Users' Interaction with Hidden Algorithms in Socio-technical Systems*. ACM Conference on Computer Supported Cooperative Work (CSCW) Doctoral Colloquium, 2017.

TEACHING EXPERIENCE

Instructor

- User-Centered Research and Evaluation (UCRE), HCII, CMU Spring 2021

Invited Guest Lectures

- *“Responsible AI: Supporting (Enough) Transparency and Bias-Awareness in AI Systems”* Spring 2021
Fairness in Machine Learning, taught by Yu-Ru Lin, School of Computing and Information, University of Pittsburgh
- *“Responsible AI: Supporting (Enough) Transparency and Bias-Awareness in AI Systems”* Fall 2020
Software Engineering for AI-Enabled Systems, taught by Christian Kastner & Eunsuk Kang, ISR, CMU
- *“User Attitudes towards Algorithmic Opacity and Transparency”* Fall 2020
Designing Artificial Intelligence for the Long-term, taught by Chinmay Kulkarni, HCII, CMU
- *“Participating and Designing around Algorithmic Sociotechnical Systems”* Fall 2019
HCI for ML, taught by Ranjitha Kumar, CS Department, UIUC
- *“Participating and Designing around Algorithmic Sociotechnical Systems”* Fall 2019
Social Computing, taught by Catherine Grevet Delcourt, CS Department, Wellesley College
- *“Communicating Algorithmic Process in Online Behavioral Advertising”* Fall 2018
Computational Advertising, taught by Hari Sundaram, CS Department, UIUC

Teaching Assistant

- Introduction to Data Mining, CS Department, UIUC Spring 2018
- Stochastic Processes, Sharif University of Technology Fall 2011
- Multimedia Networks, Sharif University of Technology Spring 2010
- Software Engineering, Sharif University of Technology Spring 2009
- Advanced Programming (Java), Sharif University of Technology Fall 2008
- Introduction to Programming (C++), Sharif University of Technology Fall 2007, Spring 2008

ADVISING EXPERIENCE

Ph.D. Students

- *Alicia DeVos*, HCII, CMU Fall 2020-present
Organizing crowd audits to detect bias in machine learning systems
- *Bonnie Fan*, HCII, CMU Fall 2020-present
Community's participation and intervention in designing and developing public-sector AI systems
- *Sara Kingsley*, HCII, CMU Fall 2020-present
Auditing economic discrimination against transgender/non-binary users

M.Sc. Students

- *Yuwen Lu*, HCII, CMU Spring 2021
Breaking political filter bubbles via social comparison
- *Janelle Wen*, HCII, CMU Spring 2021
Auditing and building equitable public-sector AI infrastructures

- *Aditi Dhabalia*, HCII, CMU Fall 2020-present
Organizing crowd audits to detect bias in machine learning systems
- *Joon Park*, CS Department, UIUC 2018-present
Adding transparency into opaque algorithmic systems
(now Ph.D. student at Stanford)
- *Joshua Asplund*, CS Department, UIUC: 2018
Auditing race and gender discrimination in online housing markets
- *Jingning Zhang*, CS Department, UIUC: Fall 2014 & Spring 2015
Fiddler, a visualization prototype interface for making sense of newsfeeds
(now software engineer at Facebook)
- *Payam Siyari*, CE Department, Sharif University: Network reconstruction under Spring 2012
compressive sensing
(now senior data scientist, Uber Technologies Inc.)

B.Sc. Students

- *Sarah Chen*, HCII, CMU Spring 2021
Auditing and building equitable public-sector AI infrastructures
- *Jai Sawkar*, HCII, CMU Spring 2021
Auditing and building equitable public-sector AI infrastructures
- *Erica Chiang*, HCII, CMU Fall 2020
Organizing crowd audits to detect bias in machine learning systems
- *Justin Zhang*, HCII, CMU Fall 2020
Organizing crowd audits to detect bias in machine learning systems
- *Andy Vuong*, CS Department, UIUC Spring 2014
Teaching HCI fundamentals (PURE program)
- *Akshat Gupta*, CS Department, UIUC Spring 2014
Teaching HCI fundamentals (PURE program)
- *Akshun Gupta*, CS Department, UIUC Spring 2014
Teaching HCI fundamentals (PURE program)

Interns

- *Nouran Soliman*: Breaking political filter bubbles via social comparison 2018-present
(now Ph.D. student at MIT)

Invited Talks & Panels

- **Seamful Design Seminar**, University of Siegen, Germany 2021
“Responsible AI: Supporting (Enough) Transparency and Bias-Awareness in AI Systems”
- **Urbana Champaign Data Science User Group**, UIUC, Champaign, IL 2020
Virtual Computer Science Camp for Refugees, James Madison University
“Responsible AI: Supporting (Enough) Transparency and Bias-Awareness in AI Systems”
- **Facebook Core Data Science Seminar**, Menlo Park, CA
“Participating and Designing around Algorithmic Sociotechnical Systems”
- **Facebook Digital Advertising Workshop**, Menlo Park, CA 2019
“Communicating Algorithmic Process in Online Behavioral Advertising”

Stanford HCI Seminar, Palo Alto, CA

SummerPIT-Understandable AI, Aarhus University, Denmark

Carnegie Mellon University, HCI Institute, Pittsburgh, PA
 University of Michigan, School of Information, Ann Arbor, Michigan
 Cornell University, Informmation Science Department, Ithaca, NY
 University of Maryland, Computer Science Department, College Park, Maryland
 University of Southern California, Computer Science Department, Los Angeles, CA
 University of Illinois, School of Information Science, Champaign, IL
 University of Chicago, Computer Science Department, Chicago, IL
“Participating and Designing around Algorithmic Sociotechnical Systems”

- **Association of Internet Researchers (AoIR)**, Montreal, Canada 2018
“Kicking the Black Box: The Perils and Promise of Algorithm Auditing”

Big Data Summit, University of Illinois at Urbana-Champaign
“Big Data Summit Data Governance”

- **Adobe Research**, San Francisco, CA 2017
“Communicating Algorithmic Process in Online Behavioral Advertising”
- **CSL Student Conference**, University of Illinois at Urbana-Champaign 2015
“Exposure to the Invisible: Algorithm Awareness from the Individual to the Collective”

SERVICE

Program Committee

- International Conference on Web and Social Media (ICWSM) 2016-2019
- International ACM Web Science Conference (WebSci) 2019

Reviewer

- Human Factors in Computing Systems Conference (CHI) 2016-present
- Computer-Supported Cooperative Work and Social Computing Conference (CSCW) 2016-present
- International Conference on Web and Social Media (ICWSM) 2015-present
- Social Network Analysis and Mining Journal (SNAM) 2020
- Human-Computer Interaction Journal 2019
- SocInfo Conference 2019
- ACM International Management of Management of Data (SIGMOD) 2017
- Semantic Web Journal 2017
- Social Media+Society Journal 2016
- International Journal of Human-Computer Studies 2016
- Behaviour & Information Technology Journal 2015
- Elsevier Computer Communications Journal 2015
- IEEE International Conference on Social Computing (SocialCom) 2011-2012

Student Volunteer

- CSCW SV Chair 2019
- CSCW SV 2018

SELECTED MEDIA COVERAGE

- “We Need Bug Bounties for Bad Algorithms” May 3, 2018
Motherboard (Vice). Amit Elazari Bar On
- “Op-ed: What algorithms can learn from Donald Trump’s hair” Jul 23, 2016
Digiday. Elizabeth Lee
- “Facebook’s news feed algorithm is so mysterious, users are developing ‘folk theories’ about how it works” May 14, 2016
Quartz. Joon Ian Wong
- “Is Facebook reinforcing your political bias?” May 11, 2016
The Christian Science Monitor. Max Lewontin
- “Will an artificially intelligent robot steal your job?” Apr 11, 2016
BBC. Graihagh Jackson
- “Search Engine Agendas” Apr 2016
Communications of ACM. Gary Anthes
- “How Facebook and Google’s Algorithms Are Affecting Our Political Viewpoints” Oct 15, 2015
Huffingtonpost. Megan Anderle
- “Here’s How Facebook’s News Feed Actually Works” July 9, 2015
Time. Victor Luckerson
- “Many, many Facebook users still don’t know that their news feeds are filtered by an algorithm” Mar 27, 2015
Splinter. Alexis Madrigal
- “How do you govern a (hidden, fluid and amoral) algorithm?” Mar 18, 2015
Fortune. Stacey Higginbotham
- “How Algorithms Subtly Control What We Read, Hear, Watch And (Ultimately) Think” Mar 16, 2015
International Business Times. Christopher Zara
- “Algorithm Awareness” Oct 21, 2014
MIT Technology Review. Karrie Karahalios and Sam Kerr
- “Algorithm Awareness” Sep 21, 2014
CBC Radio
- “The secret system controlling your Facebook News Feed” Jul 30, 2014
New Scientist. Hal Hodson
- “A Social Science Audit for Facebook’s News Feed?” Jul 30, 2014
Social Science Space. J. Nathan Matias
- “OkCupid reveals it’s been lying to some of its users. Just to see what’ll happen” Jul 28, 2014
Washington Post. Brian Fung
- “Uncovering Algorithms: Looking Inside the Facebook News Feed” Jul 22, 2014
MIT Center for Civic Media. J. Nathan Matias