Mahnaz Roshanaei
Curriculum Vitae
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RESEARCH AEPPOINTMENTS

Research Staff, Department of Communication, Stanford University 2021-current
Visiting Scholar, Department of Computational Media, University of California, Santa Cruz 2024-current
Postdoctoral Research Fellow, Department of Psychology, Stanford University 2019-2020
Postdoctoral Research Associate, Department of Computer Science, University of Illinois-Chicago 2018-2019
Research Scientist, Toshiba America Research Inc, Irvine 2016-2017

EDUCATION

PhD., Computer Science, University of Colorado-Boulder 2013-2016
Thesis: "Study and Analysis of Emotions in Online Social Networks and Smartphones"
M.Sc. in Computer Engineering, University of California-Irvine 2010-2012
Thesis: "A Harvesting-aware routing protocol for energy- efficient data collection in wireless sensor networks"
M.Sc. in Electrical Engineering, University of Tehran, Iran 2005-2008
Thesis: "A Smart antenna array in IEEE 802.16e wireless applications"

REASERCH INTERESTS

Substantive

Human-AI Interaction, Social behavior, Media and AI Effects, Well-being, Social Network Analysis, Social Media

Methodological

Data Mining, Machine Learning, LLM, Network Science, Statistical and Causal Inference, Smartphone Sensing, Ecological-Momentary Assessments, Experience Sampling, Longitudinal Modeling, Multilevel Modeling

RESEARCH EXPERIENCE

Postdoctoral Researcher/ Research Staff

Navigating Empathy in Human-AI Interactions
Department of Computational Media, University of California, Santa Cruz

- Lead a research project and develop a roadmap to propose, collect, and manage a longitudinal observational study on college students' interactions with AI agents in collaboration with team members in GUII lab
- Ran an analysis through OpenAI to investigate the differences in empathy between human-human and human-AI interactions and investigates factors that evoke empathy in both settings
- Writing an NSF grant proposal to develop an empathic AI agent, focusing on advancing human-centered technology for emotional support and social connection

Sensor-based Assessment of Behavioral Lifestyles and Experiences
Department of Communication, Stanford University

- Manage and create the roadmap to propose, govern, share and analysis of multimodal sensor-based data in collaboration with team members in MAP lab
- Implemented the multilevel modeling to explore the role of duration and frequency of smartphone use on individuals' momentary wellbeing and the moderation effects of context.
- Predicting individuals' daily wellbeing through multimodal smartphone sensing data using LLM based methods

Stanford Community Project
Departments of Psychology and Communication, Stanford University
- Managed and provided the guidelines to customize *beiwe* app for EMA data collection and ran a longitudinal multi-year study of college students' behavior and well-being in collaboration with team members in SSNL lab.
- Investigated the structure of the social networks of college students and the role of those networks on their daily social behavior and well-being.
- Implemented a mediation analysis using MLM to examine the effect of supportive social interactions on loneliness.
- Secured seed grant funding from Stanford Human-centered AI (HAI) to study the well-being of college students.
- Implemented the multilevel modeling to explore the moderation effects of macro and micro context in students' daily social interactions and psychological well-being.

Empathy through Online Personal Stories
Department of Computer Science, University of Illinois-Chicago
- Lead a research project and ran a cross-sectional observational study through Qualtrics and Amazon MTurk to investigate the association of empathy and online stories.
- Implemented a causal tree to discover causal factors of linguistic and psychological features in online stories, considering different treatment variables.
- Supervised and provided research guidance of grad students in order to predict empathy readers feel, and sharing the story in social media platforms using SVM, RNN and LSTM techniques.

Research Scientist

Improving Facility Management
Toshiba America Research Inc, Irvine
- Proposed the data-driven roadmap to improve the cleaning operations in Singapore airport.
- Developed a passenger flow probabilistic model to predict the number of passengers in order to improve the cleaning scheduling.
- Worked with Toshiba data science team to implement and evaluate the state-of-the-art machine learning techniques in order to improve the work order management in NYC hospital.

Toshiba Analytics Big Data Architecture
Toshiba America Electronic Components, Irvine
- Initiated and conducted a research project in collaboration with faculty members in the department of Computer Science at UC Irvine to evaluate the performance of GridDB, high performance, high scalability and high reliability database for big data, over Cassandra.
- Evaluated the potential technical components for a Toshiba analytics architecture including source data, data staging, data management, and data modeling. Proposed a big data architecture including open sources and commercial tools for SQL/NoSQL dataset.

Doctoral Student Researcher

Study and Analysis of Emotions in Online Social Networks and Smartphones
Dept of Computer Science, University of Colorado-Boulder
- Designed and developed an android app, EmotionSensing, and conducted a longitudinal study in order to collect multimodal smartphone-based data.
- Developed a personalized multiclass classifier using SVM and random forest to predict individuals' affect based on their multimodal collected data.
- Investigated the differentiating behavioral attributes of positive and negative twitter's users through large-scale twitter dataset and using social network metrics.
- Implemented a personalized classifier for sentiment analysis of tweets using LIWC, user profile, user engagement, and network metrics.

PUBLICATIONS

Roshanaei, M., Vaid, S. S., Courtney, A. L., Soh, S. J., Zaki, J., & Harari, G. M. (2024). Meaningful peer social interactions and momentary well-being in context. Social Psychological and Personality Science, 0(0). DOI: 10.1177/19485506241248271

Vaid, S.S., Kroencke, L., **Roshanei, M.,** Talaifar, S., Hancock, J.T., Back, M.D., Gosling, S.D., Ram, N., & Harari, G.M. (2023). Variation in social media sensitivity across people and contexts. in press at *Scientific Reports.* DOI:10.31234/osf.io/yfp45

Courtney, A.L, Baltiansky, D, Fang, W.M., **Roshanaei, M.,** Aybas, Y.A., Samuels, N.A., Wetchler, E., Wu, Z., Jackson, M.O., Zaki, J. (2021). Social microclimates and wellbeing. in press at *Emotion*. DOI: 10.31234/osf.io/pha3j

Roshanaei, M, Tran, C, Morelli, S., Caragea, C. Zheleva, E. (2019). Paths to empathy: heterogeneous effects of reading personal stories online. In Proc. of IEEE International Conference on Data Science and Advanced Analytics (DSAA). pp. 570-579, DOI:10.1109/DSAA.2019.00072

Roshanaei, M., Han, R., & Mishra, S. (2017). EmotionSensing: Predicting Mobile User Emotion. In Proc. of IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM). pp. 570-579, DOI:10.1145/3110025.3110127

Roshanaei, M., Han, R., Mishra, S. (2017). Having Fun?: Personalized Activity-Based Mood Prediction in Social Media. Lecture Notes in Social Networks. Springer, Cham. DOI:10.1007/978-3-319-51049-1_1

Roshanaei, M., Han R., Mishra, S. (2015). Features for Mode Prediction is Social Media. In Proc. of IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM). pp. 1580–1581, DOI:10.1145/2808797.2809342

Roshanaei, M., Mishra, S. (2015). Studying the attributes of users in Twitter considering their emotional states. Soc. Netw. Anal. Min. Vol. 5, DOI:10.1007/s13278-015-0278-9

Roshanaei, M., Mishra, S. (2014). An Analysis of Positivity and Negativity Attributes of Users in Twitter. In Proc. of IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM). pp. 365-370, DOI:10.1109/ASONAM.2014.6921611.

Dang, N., **Roshanaei, M.,** Bozorgzadeh, E., Venkatasubramanian, N. (2013). Adapting Data Quality with Multi hop Routing for Energy Harvesting Wireless Sensor Networks. in Proc. of International Conference on Green Computing Conference (IGCC). pp. 1-6, DOI:10.1109/IGCC.2013.6604523.

Roshanaei, M., Vahedi, E., Lucas, C. (2010). Adaptive Antenna Application by Brain Emotional Learning Based Intelligent Controller. IET Microw. Antennas Propag., Vol. 4, pp. 2247– 2255, DOI:10.1049/iet-map.2009.0101

Roshanaei, M., Maleki, M. (2009). Dynamic-KNN: A Novel Locating Method in WLAN Based on Angle of Arrival. In Proc. of IEEE Symposium on Industrial Electronics & Applications. pp. 722-726, DOI:10.1109/ISIEA.2009.5356349.

Roshanaei, M., Valipour, M. (2009). Energy-Efficient Data Gathering over Wireless Sensor Networks: Correlated Sources and Lossy Channels. In Proc. of IEEE International Conference on Communication Networks and Services Research (CNSR). pp. 449- 451, DOI:10.1109/CNSR.2009.81

Roshanaei, M., Lucas, C., Mehrabian, A.R. (2009). Adaptive Beamforming Using a Novel Numerical Optimization Algorithm. IET Microw. Antennas Propag., Vol. 3, pp. 765–773, DOI: 10.1049/iet-map.2008.0188

Roshanaei, M., Atashpaz-Gargari, E., Lucas, C. (2008). Adaptive beamforming using colonial competitive algorithm. In Proc. of 2nd International joint conference on computational engineering. https://www.icasite.info/icasite/ica_papers/new_code/icapap_2008_en_mahna_adaptivebe.pdf

Sahraei-Ardakani, M., **Roshanaei, M.,** Rahimi-Kian, A., Lucas C. (2008). A Study of Electricity Market Dynamics Using Invasive Weed Colonization Optimization. In Proc. of IEEE Symposium on Computational Intelligence and Games. pp. 276-282, DOI: 10.1109/CIG.2008.5035650

Roshanaei, M., Faraji-Dana, R. (2007). Coupling Effects on Adaptive Smart Array Pattern Synthesis by Brain Emotional Learning Based Intelligent Controller. In Proc. of IEEE International Conference on Intelligent and Advanced Systems (ICIAS). pp. 479-483, DOI: 10.1109/ICIAS.2007.4658434

Roshanaei, M., Faraji-Dana, R. (2007). A New Quad-Band CPW-fed Stacked Antenna for Wireless LAN Applications. In Proc. of IEEE International Conference on Electromagnetics in Advanced Applications (ICEAA). pp. 535-538, DOI:10.1109/ICEAA.2007.4387355.

MANUSCRIPTS IN PREPARATION AND UNDER REVIEW

Roshanaei M., Rezapour R., El-Nasr M.S. (*under review*). Talk, Listen, Connect: Navigating Empathy in Human-AI Interactions. https://arxiv.org/abs/2409.15550

Roshanaei M., Vaid, S.S., Zaki J., Harari, G. (*under review*). Interaction Partners and Empathy in the Selection of Communication Channels During Meaningful Social Interactions, https://osf.io/preprints/psyarxiv/ty68s?view_only=

Roehrick K., **Roshanaei, M.,** Soh, S., Vaid, S., Bayer, J., & Harari, G. M. (*under review*). The Effects of Smartphone Use and Well-Being in Context.

Roshanaei M., Nepal, S., Chi Y., Harari, G. (*in prep*). Snapshots of Daily Social Behavior and Wellbeing Through the Lens of Smartphone Sensing Using LLM-based Models.

Chi Y., Vaid S., **Roshanaei M.,** Peters H., Harari, G. M. (*in prep*). Mobility Shape: Mapping the Connection between Daily Travel Structure and Subjective Well-being.

INVITED TALKS

Annual Convention of Society for Personality and Social Psychology, Denver, Colorado	2025
5th Annual Congress on Mental Health, Paris, France	2025
University of California, Santa Cruz, Department of Computer Science	2024
University of Southern California, Annenberg School of Communication	2024
University of Chicago, MACSS program	2024
San Jose State University, Department of Computer Science	2023
Max Plank Institute for Demographic Research	2022
Sharif university of technology, Resana Annual Conference on Technology	2021
Tehran university, Workshop in Machine Learning and Signal Processing	2019
University of Southern California, Information Science Institute	2018

CONFERENCE PRESENTATIONS

Roshanaei M., Vaid, S.S., Harari, G. Social Interactions in the Era of Multiple Channels: a Media Richness Perspective. Accepted at the 10th International Conference on Computational Social Science (IC2S2 2024), Philadelphia, PA.

Roshanaei M., Vaid, S.S., Stogianni, E., Zaki J., Harari, G. Energy intensive social Interaction and

subsequent wellbeing in in Young Adults. Accepted at Annual Meeting of the Society for Personality and Social Psychology, (SPSP 2024), San Diego, CA.

Roshanaei, M, Sumer, V., Soh, J.S., Courtney, A.L., Zaki, J., Harari, G. Meaningful Social Interaction and Well-Being in Young Adults: The Moderating Role of Micro and Macro Contexts. Accepted at the 9th International Conference on Computational Social Science (IC2S2 2023), Copenhagen, Denmark.

Roshanaei, M, Sumer, V., Soh, J.S., Courtney, A.L., Zaki, J., Harari, G. Social Interactions and Psychological Wellbeing in Everyday Life. Accepted at the 73rd Annual International Communication Association Conference (ICA 2023), Toronto, Ontario, Canada. *Awarded Top Student Paper.*

Roshanaei, M., Sumer, V., Soh, J.S., Courtney, A.L., Zaki, J., Harari, G. Social Meaningful Social Interactions, Well-being, and the Moderating Role of Micro Contexts Within College Students. Poster Accepted at the Happiness and WellBeing. Preconference at the Annual Meeting of the Society for Personality and Social Psychology, (SPSP 2023), Atlanta, GA.

Roshanaei, M., Sumer, V., Courtney, A.L., Soh, J.S., Zaki, J., Harari, G. (July 2022). Multilevel Analyses of Everyday Social Interactions and Psychological Wellbeing in Young Adults: The Moderating Role of Dispositions and Context. Talk presented at the 8th International Conference on Computational Social Science (IC2S2 2022), Chicago, IL.

Roshanaei, M., Tran, C., Morelli, S., Caragea, C., Zheleva, E. Paths to empathy: heterogeneous effects of reading personal stories online. Talk presented at the Data Science and Advanced Analytics (DSAA 2019), Washington, DC.

Roshanaei, M., Faraji-Dana, R. Coupling Effects on Adaptive Smart Array Pattern Synthesis by Brain Emotional Learning Based Intelligent Controller. Talk presented at the International Conference on Intelligent and Advanced Systems (ICIAS 2007). Kuala Lumpur, Malaysia.

NEWSPAPERS AND WEBSITES

National: EurekAlert, PhysOrg, Morning News, Social News XYZPress Reader, Mid-day, Cite Drive, News Medical Life Science, Altmetric,

International: Free Malaysia Today, Med India, Tribune India, The Hans India,

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TEACHING INTERESTS

Undergraduate and graduate core courses:

- Data Science Foundation
- Intro to Prob and Stats
- Intro to Communication Theory
- Intro to HCI
- Applied Machine Learning and AI
- Intro to Deep Learning
- Data analytics and Mining
- Social Network Analysis
- Longitudinal Modeling

Cross-listed courses building on my research interests:

- Digital Media and Well-Being
- Social Media Use and Effect
- Quantitative Methods in Communication
- Causal Inference for Social and Behavioral Science
- Ethic in Technology and AI
- Topics in Social and Emotional Implications of AI
- Topics in Human-AI Interaction
- Topics in Interpersonal Communication and Wellbeing

TEACHING & MENTORING EXPERIENCE

Pedagogical training

Stanford Postdoc Teaching Certificate 2022-current

- Participate in postdoc pedagogy journal clubs
- Practice in syllabus design and teaching practice
- Participated in Stanford Scientific Teaching Summer Institute

Lecturer

Data science in Computational Experiences, Dept of Computational Media, UC Santa Cruz Winter 2025

- Teaching lecture and project-based course for 30 plus grad students.
- Designed syllabus and homework, conducting lectures, and providing research guidance.

Ethics and Activism in Tech and Design, Dept of Computational Media, UC Santa Cruz Winter 2024, 2025

- Teaching lecture and project-based course for 30 grad students.
- Updating the syllabus and homework, conducting lectures, and providing research guidance.

Digital Media and Social Network, Dept of Communication, Stanford University Summer 2022

- Taught lecture and project-based course for 30 high school, undergrad and grad students.
- Designed syllabus, conducted lectures, provided research guidance and graded assignments.

Intro to Data Science Programming, MS in Data Science, I-School, University of California-Berkeley 2020-2021

- Taught lecture and project-based course for 15 grad students.
- Updated the syllabus and homework in collaboration with other instructors, conducted lectures, provided research guidance and graded assignments.

Dis Structure and Computing Applications I, and II, Dept of Computer Science, CSU Long Beach Spring 2018

- Taught lecture and exam-based course for 55+ undergrad students.
- Updated the syllabus, designed the homework, conducted lectures, and graded assignments.

Network Analysis and Mining, Dept of Computer Science, Pomona College Fall 2017

- Taught lecture and project-based course for 20 undergrad students.
- Designed and adjusted a grad level course to undergrad, conducted lectures, provided research guidance and graded assignments.

Intro. to Computer Science Programming, Dept of Computer Science, Pomona College Fall 2017

- Co-taught lecture and exam-based course for 55+ undergrad students.
- Conducted lectures, designed homework and exams in collaboration with another instructor.

Teaching Assistant

Data Structures, Intro. to Programming, University of Colorado-Boulder 2013-2015

Engr. Probability, Signal&Sys, Engr. Problem Solving, Electron Device & Circuit, Network Analysis I,II, University of California-Irvine 2010-2012

Mentoring

1-on-1 Research Independent Study, Dept of Computational Media, UC Santa Cruz Spring 2024 - Current

- Supervised and provided the research guidance of graduate students.

1-on-1 Research Mentorship Program, Cambridge Centre for International Research, Ltd. Summer 2022 - Current

- Supervised and provided the research guidance of high school and undergrad students.

Data Science for Social Good Summer Program, Stanford Data Science, Stanford University Summer 2020

- Participated in in the review of student fellows' applications, the selection and scoping of projects, designing learning activities and preparing the technical infrastructure.
- Lead and coordinated the research duties of student fellows, supported the fellows in advancing their projects and served as coordinators with the project sponsor.

Summer Institute in Computational Social Science (Bay-SICSS), Stanford University Summer 2020

- Supervised and provided the research guidance of PhD and postdoc students.
- Served as coordinators with the project sponsor.

SPECIALIZED TRAINING

APA Advanced Training Institute Summer 2021
Topic: Growth Modeling: Linear, Nonlinear, SEM, and MLM Approaches

Audited Courses at Stanford University 2019-current
Intro to Deep Learning, Causal Inference and Machine Learning, NLP with Deep Learning, Machine Learning with Graphs, Research Methods in Social Psychology, Advanced Studies in Behavior and Social Media, Personality and Digital Media

AWARDS & HONORS

IC2S2 Travel Grant Award	2024
ICA Interpersonal Communication Division's Top Student Paper Award	2023
Stanford HAI (Human-centered Artificial Intelligence) Seed Grant, Stanford University	2022
Summer Graduate School Fellowship, University of Colorado-Boulder	2015
Graduate Student Travel Award, University of Colorado-Boulder	2015
Computer Science Fellowship, University of Colorado-Boulder	2013
OCEC award, Outstanding Engineering Student Award from the OCEC, Huntington Beach	2012

REVIEWER ACTIVITIES

Conferences

The international conference of Human-Computer Interaction
The international Conference in Computational Social Science
The International Communication Association
Workshop on Computational Methods in Online Misbehavior
The Web Conference
Workshop on Women in Data Science
EEE/ACM International Conference on Advances in Social Networks Analysis and Mining
Post-ASONAM-Edited Book

Funding Agencies

National Science Centre Poland

AFFELIATIONS & MEMBERSHIP

Stanford Human-Centered AI
The International Communication Association
American Association for The Advancement of Science
Society for Personality and Social Psychology
National Center for Faculty Development and Diversity
Summer Institute in Computation Social Science

DEPARTMENTAL & UNIVERSITY SERVICE

Program Committee at IC2S2	2024-Current
Postdoc Officer, Persian Students Association, Stanford University	2018-2019
Student Officer, Persian Students Organization, University of Colorado-Boulder	2014-2015
President, Society of Iranian Graduate Students, University of California-Irvine	2011-2012
Student Officer, Society of Iranian Graduate Students, University of California-Irvine	2010-2011

REFERENCES (available upon request)