

# Koustuv Saha, PhD

Senior Researcher, Microsoft Research

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I am a computer scientist in the interdisciplinary areas of computational social science and social computing. By complementing multimodal datastreams with social media, I adopt methods from machine learning, statistics, natural language, and causal inference analysis to sense, predict, and examine wellbeing and psychosocial dynamics of individuals and collectives, particularly in situated contexts, such as college campuses and workplaces.

## Education

- 2016–2021 **Doctor of Philosophy (Ph.D.), Computer Science.**  
School of Interactive Computing, College of Computing, Georgia Institute of Technology **GPA:** 4.0/4.0  
**Doctoral Minor:** Computational Social Science and International Affairs  
**Dissertation:** Computational and Causal Approaches on Social Media and Multimodal Sensing Data: Examining Wellbeing in Situated Contexts  
**Committee:** Munmun De Choudhury (Chair & Advisor), Gregory D. Abowd, Thomas Plötz, Emre Kıcıman, Gloria Mark
- 2008–2012 **Bachelor of Technology (Hons.), Computer Science and Engineering.**  
Computer Science and Engineering, Indian Institute of Technology Kharagpur  
**Guide:** Sujoy Ghose | **B.Tech Project:** Ontology-based Semantic Information Retrieval

## Publications

[Google Scholar](#) | [DBLP](#) | [ACM DL](#) | [ResearchGate](#).

### Refereed Conference and Journal Articles

- J<sub>21</sub> 2022 **Saha, K.**, Yousuf, A., Boyd, R. L., Pennebaker, J. W., & De Choudhury, M. (2022). Social Media Discussions Predict Mental Health Consultations on College Campuses. *Nature Scientific Reports*, (2022) 12:123, [Link](#).  
Nature Sci Rep
- J<sub>20</sub> 2022 Zhou, J., **Saha, K.**, López, I., Deeter, C. R., Yoo, D. Y., De Choudhury, M., & Arriaga, R. (2022). Veteran PACM HCI: Critical Theory as a Lens to Understand Veterans' Needs and Social Support on Social Media. In *Proceedings of the ACM on Human-Computer Interaction (PACM HCI)* (Forthcoming), [PDF](#).  
CSCW
- J<sub>19</sub> 2021 **Saha, K.**, Torous, J., Kıcıman, E., & De Choudhury, M. (2021). Understanding Side Effects of Antidepressants: JMIR MH Large-scale Longitudinal Study on Social Media Data. *JMIR Mental Health*; 8 (3), [Link](#).
- J<sub>18</sub> 2021 **Saha, K.\***, Grover, T.\*, Mattingly, S. M., Das Swain, V., Gupta, P., Martinez, G. J., Robles-Granda, P., Mark, PACM IMWUT G., Striegel, A., & De Choudhury, M. (2020). Person-Centered Predictions of Psychological Constructs with Social Media Contextualized by Multimodal Sensing. In *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*, 5, (1), 32, (\* co-primary authors), Presented at UbiComp 2021, [PDF](#).
- J<sub>17</sub> 2021 **Saha, K.**, Yousuf, A., Hickman, L., Gupta, P., Tay, L., & De Choudhury, M. (2021). A Social Media Study on PACM HCI: Demographic Differences in Perceived Job Satisfaction. In *Proceedings of the ACM on Human-Computer Interaction*, CSCW 5, (CSCW1), 167, [PDF](#).
- C<sub>18</sub> 2021 **Saha, K.**, Seybolt, J., Mattingly, S. M., Aledavood, T., Konjeti, C., Martinez, G. J., Grover, T., Mark, G., & ACM CHI De Choudhury, M. (2021). What Life Events are Disclosed on Social Media, How, When, and By Whom? In *Proceedings of the CHI Conference on Human Factors in Computing Systems*, [PDF](#).
- C<sub>17</sub> 2021 **Saha, K.**, Liu, Y., Vincent, N., Chowdhury, F. A., Neves, L., Shah, N., & Bos, M. W. (2021). AdverTiming ACM CHI Matters: Examining User Ad Consumption for Effective Ad Reallocations on Social Media. In *Proceedings of the CHI Conference on Human Factors in Computing Systems*, [PDF](#).

- C<sub>16</sub> 2021 Wang, Q., **Saha, K.**, Gregori, E., Joyner, D., & Goel, A. K. (2021). Towards Mutual Theory of Mind in Human-AI Interaction: How Language Reflects What Students Perceive About a Virtual Teaching Assistant. In Proceedings of the CHI Conference on Human Factors in Computing Systems, [PDF](#).
- J<sub>16</sub> 2021 ElSherief, M., **Saha, K.**, Gupta, P., Mishra, S., Seybolt, J., Xie, J., O'Toole, M., Burd-Sharps, S., & De HSSC Choudhury, M. (2020). Impacts of School Drills on the Psychological Well-being of American K-12 School Communities: A Social Media Study. *Nature Humanities and Social Sciences Communications*, [Link](#).
- J<sub>15</sub> 2021 Gong, C., **Saha, K.**, & Chancellor, S. (2021). "The Smartest Decision for My Future": Social Media Reveals PACM HCI: Challenges and Stress During Post-College Life Transition. In Proceedings of the ACM on Human-Computer CSCW Interaction, 5, (CSCW2), 298, [PDF](#).
- C<sub>15</sub> 2021 Chowdhury, F. A., Liu, Y., **Saha, K.**, Vincent, N., Neves, L., Shah, N., & Bos, M. W. (2021). CEAM: The Effectiveness of Cyclic and Ephemeral Attention Models of User Behavior on Social Platforms. In Proceedings of the 15<sup>th</sup> International AAAI Conference on Web and Social Media, [PDF](#).
- J<sub>14</sub> 2021 Martinez, G.J., Mattingly, S. M., Robles-Granda, P., **Saha, K.**, Sirigiri, A., Young, J., Chawla, N. V., De JMIR mHealth Choudhury, M., D'Mello, S. K., Mark, G., & Striegel, A. (2021). Predicting Participant Compliance with Fitness & uHealth Tracker Wearing and EMA Protocols in Information Workers: An Observational Study. *Journal of Medical Internet Research mHealth and uHealth*; 9(11), [Link](#).
- J<sub>13</sub> 2021 Mirjafari, S., Nepal, S. K., Bagherinezhad, H., Martinez, G. J., **Saha, K.**, Obuchi, M., Audia, P., Chawla, N. V., IEEE Pervasive Dey, A. K., Striegel, A., & Campbell, A. T. (2021). Predicting Job Performance Using Mobile Sensing. *IEEE Computing Pervasive Computing*, [Link](#).
- J<sub>12</sub> 2021 Robles-Granda, P., Lin, S., Wu, X., Campbell, A. T., De Choudhury, M., Dey, A.K., D'Mello, S. K., Gregg, J. IEEE Comp. M., Grover, T., Mark, G., Martinez, G. J., Masaba, K., Mattingly, S. M., Mirjafari, S., Moskal, E., Nies, K., Intel. Magazine **Saha, K.**, Striegel, A., & Chawla, N. V. (2021). Jointly Modeling and Predicting Job Performance, Personality, and Well-Being. In *IEEE Computational Intelligence Magazine*, 16 (2), [Link](#).
- J<sub>11</sub> 2020 **Saha, K.**, Torous, J., Caine, E. D., & De Choudhury, M. (2020). Psychosocial Effects of the COVID-19 JMIR Pandemic: Large-scale Quasi-Experimental Study on Social Media. *Journal of Medical Internet Research (JMIR)*, 22(11), e22600, [Link](#).
- C<sub>14</sub> 2020 Das Swain, V.\*, **Saha, K.\***, Abowd, G. D., & De Choudhury, M. (2020). Social Media and Ubiquitous IEEE CogMI Technologies for Assessing Remote Worker Wellbeing and Productivity in a Post-Pandemic World. Proceedings of the 2020 IEEE Second International Conference on Cognitive Machine Intelligence (CogMI), (\* co-primary authors).
- C<sub>13</sub> 2020 **Saha, K.**, & Sharma, A. (2020). Causal Factors of Effective Psychosocial Outcomes in Online Mental Health AAAI ICWSM Communities. Proceedings of the 14<sup>th</sup> International AAAI Conference on Web and Social Media., Presented at ICWSM 2020, [PDF](#).
- C<sub>12</sub> 2020 Das Swain, V.\*, **Saha, K.\***, Reddy, M. D., Rajvanshy, H., Abowd, G. D., & De Choudhury, M. (2020). Modeling ACM CHI Organizational Culture with Workplace Experiences Shared on Glassdoor. Proceedings of the CHI Conference on Human Factors in Computing Systems, (\* co-primary authors), Video Presented for CHI 2020, [PDF](#).
- C<sub>11</sub> 2020 Bin Morshed, M.\*, **Saha, K.\***, De Choudhury, M., Abowd, G. D., & Ploetz, T., (2020). Modeling Self-Esteem EAI Pervasive with Passive Sensing. In Proceedings of the 14th EAI International Conference on Pervasive Computing Technologies for Healthcare, (\* co-primary authors), Video Presented for PervasiveHealth 2020, [PDF](#).
- C<sub>10</sub> 2020 **Saha, K.**, Ernala, S. K., Dutta, S., Sharma, E., & De Choudhury, M. (2020). Understanding Moderation in HCII Online Mental Health Communities. In 22<sup>nd</sup> International Conference on Human-Computer Interaction, Springer LNCS, Presented at HCII 2020, [PDF](#).
- J<sub>10</sub> 2020 Bin Morshed, M., Kulkarni, S. S., Li, R., **Saha, K.**, Nachman, L., Lu, H., Galante, L., Srivastava, S., Mirabella, JMIR mHealth L., De Choudhury, M., de Barbaro, K., Ploetz, T., & Abowd, G. D. (2020). A Real-Time Eating Detection & uHealth System for Capturing Eating Moments and Triggering EMAs to Collect Further Context. *Journal of Medical Internet Research mHealth and uHealth*.

- C<sub>9</sub> 2019 **Saha, K.**, Sugar, B., Torous, J., Abrahao, B., Kiciman, E., & De Choudhury, M. (2019). A Social Media Study on The Effects of Psychiatric Medication Use. In Proceedings of the 13<sup>th</sup> International AAAI Conference on Web and Social Media., Presented at ICWSM 2019, [Outstanding Study Design Paper](#), [PDF](#).
- J<sub>9</sub> 2019 **Saha, K.**, Reddy, M. D., Mattingly, S. M., Moskal, E., Sirigiri, A., & De Choudhury, M., (2019). LibRA: On LinkedIn based Role Ambiguity and Its Relationship with Wellbeing and Job Performance. In Proceedings of the PACM HCI: ACM on Human-Computer Interaction (PACM HCI), 3, (CSCW), 137., Presented at CSCW 2019, [PDF](#).
- J<sub>8</sub> 2019 **Saha, K.**, Kim, S.C., Reddy, M. D., Carter, A.J., Sharma, E., Haimson, O.L., & De Choudhury M., (2019). The Language of LGBTQ+ Minority Stress Experiences on Social Media. In Proceedings of the ACM on CSCW Human-Computer Interaction (PACM HCI), 3, (CSCW), 89., Presented at CSCW 2019, [PDF](#).
- C<sub>8</sub> 2019 **Saha, K.**, Chandrasekharan, E., & De Choudhury, M. (2019). Prevalence and Psychological Effects of Hateful Speech in Online College Communities. In Proceedings of the 11<sup>th</sup> ACM Conference on Web Science, Presented at WebSci 2019, [PDF](#).
- C<sub>7</sub> 2019 **Saha, K.**, Reddy, M. D., Das Swain, V., Gregg, J.M., Grover, T., Lin, S., Martinez, G.J., Mattingly, S. M., Mirjafari, S., Mulukutla, R., Nies, K., Robles-Granda, P., Sirigiri, A., Yoo, D.W., Audia, P., Campbell, A.T., Chawla, N.V., D'Mello, S.K., Dey, A.K., Jiang, K., Liu, Q., Mark, G., Moskal, E., Striegel, A., & De Choudhury, M. (2019). Imputing Missing Social Media Data Streams in Multisensor Studies of Human Behavior. In Proceedings of the 8<sup>th</sup> International Conference on Affective Computing and Intelligent Interaction (ACII), (Non *first three* authors are listed alphabetically), Presented at ACII 2019, [PDF](#).
- J<sub>7</sub> 2019 **Saha, K.**, Rajvanshy, H., Sirigiri, A., Gregg, J.M., Lin, S., Martinez, G.J., Mattingly, S. M., Mirjafari, S., Mulukutla, R., Nies, K.A., Reddy, M. D., Robles-Granda, P., Campbell, A.T., Chawla, N.V., D'Mello, S.K., Dey, A. K., Jiang, K., Liu, Q., Mark, G., Moskal, E., Striegel, A., Tay, L., Abowd, G. D., & De Choudhury, M (2019). A Multisensor Person-Centered Approach to Understand the Role of Daily Activities in Job Performance with Organizational Personas. In Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies, 3,(4),130., (Non *first four* authors are listed alphabetically), [PDF](#).
- J<sub>6</sub> 2019 Bin Morshed, M., **Saha, K.**, Li, R., D'Mello, S.K., De Choudhury, M., Abowd, G. D., & Ploetz, T., (2019). Prediction of Mood Instability with Passive Sensing. In Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies, 3,(3),75., [PDF](#).
- J<sub>5</sub> 2019 **Saha, K.\***, Torous, J.\*, Ernala, S.K., Rizuto, C., Stafford, A., & De Choudhury, M. (2019). A Computational Study of Mental Health Awareness Campaigns on Social Media. Translational Behavioral Medicine, 9(6), (\* co-primary authors), [Link](#).
- J<sub>4</sub> 2019 Mirjafari, S., Masaba, K., Grover, T., Wang, W., Audia, P., Campbell, A.T., Chawla, N.V., Das Swain, V., De Choudhury, M., D'Mello, S.K., Dey, A.K., Gao, G., Gregg, J.M., Grover, T., Jagannath, K., Jiang, K., Lin, S., Liu, Q., Mark, G., Martinez, G.J., Mattingly, S. M., Moskal, E., Mulukutla, R., Nepal, S., Nies, K.A., Reddy, M. D., Robles-Granda, P., **Saha, K.**, Sirigiri, A., & Striegel, A., (2019). Differentiating Higher and Lower Job Performers in the Workplace using Mobile Sensing. In Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies, 3, (2), 37, (Non *first four* authors are listed alphabetically), [PDF](#).
- C<sub>6</sub> 2019 **Saha, K.**, Bayraktaraglu, A.E., Campbell, A.T., Chawla, N.V., De Choudhury, M., D'Mello, S.K., Dey, A.K., Gao, G., Gregg, J.M., Jagannath, K., Mark, G., Martinez, G.J, Mattingly, S. M., Moskal, E., Sirigiri, A., Striegel, A., & Yoo, D. W., (2019). Social Media as a Passive Sensor in Longitudinal Studies of Human Behavior and Wellbeing. In Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems Extended Abstracts, (Non *first* authors are listed alphabetically), Presented at CHI 2019, [PDF](#).
- C<sub>5</sub> 2019 Mattingly, S. M., Gregg, J.M., Audia, P., Bayraktaraglu, A.E., Campbell, A. T., Chawla, N.V, Das Swain, V., De Choudhury, M., D'Mello, S.K., Dey, A.K., Gao, G., Jagannath, K., Jiang, K., Lin, S., Liu, Q., Mark, G., Martinez, G.J, Masaba, K., Mirjafari, S., Moskal, E., Mulukutla, R., Nies, K., Reddy, M. D., Robles-Granda, P., **Saha, K.**, Sirigiri, A., & Striegel, A., (2019). The Tesserae Project: Large-Scale, Longitudinal, *In Situ*, Multimodal Sensing of Information Workers. In Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems Extended Abstracts, (Non *first two* authors are listed alphabetically), [PDF](#).

- C<sub>4</sub> 2019 ACM FAT\* Ribeiro, F. N.\*, **Saha, K.\***, Babaei, M., Henrique, L., Messias, J., Benevenuto, F., Goga, O., Gummadi, K. P., & Redmiles, E. M. (2019). On Microtargeting Socially Divisive Ads: A Case Study of Russia-Linked Ad Campaigns on Facebook. In Proceedings of the 2<sup>nd</sup> ACM Conference on Fairness, Accountability, and Transparency (FAT\*), (\* co-primary authors), Presented at FAT\* 2019, [PDF](#).
- C<sub>3</sub> 2019 SocInfo **Saha, K.**, Reddy, M. D., & De Choudhury M., (2019). JobLex: A Lexico-Semantic Knowledgebase of Occupational Information Descriptors. 11th International Conference on Social Informatics (SocInfo), [PDF](#).
- C<sub>2</sub> 2018 AAAI ICWSM **Saha, K.**, Weber, I., & De Choudhury, M. (2018). A Social Media Based Examination of the Effects of Counseling Recommendations After Student Deaths on College Campuses. In Proceedings of the 12<sup>th</sup> International AAAI Conference on Web and Social Media., Presented at ICWSM 2018, [PDF](#).
- J<sub>3</sub> 2018 PACM HCI: CSCW **Saha, K.**, & De Choudhury, M. (2017). Modeling Stress with Social Media Around Incidents of Gun Violence on College Campuses. In Proceedings of the ACM on Human-Computer Interaction, 1, (CSCW), 92., Presented at CSCW 2018, [PDF](#).
- J<sub>2</sub> 2017 PACM IMWUT **Saha, K.**, Chan, L., de Barbaro, K., Abowd, G. D., & De Choudhury, M. (2017). Inferring Mood Instability on Social Media by Leveraging Ecological Momentary Assessments. Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies, 1, (3), 95., Presented at UbiComp 2017, [PDF](#).
- J<sub>1</sub> 2017 JMIR **Saha, K.**, Weber, I., Birnbaum, M.L., & De Choudhury, M. (2017). Characterizing Awareness of Schizophrenia Among Facebook Users by Leveraging Facebook Advertisement Estimates. Journal of Medical Internet Research, 19(5)., Presented at Mental Health Symposium, CHI 2017, [Link](#).
- C<sub>1</sub> 2017 ACM CSS Sharma, E.\*, **Saha, K.\***, Ernala, S.K.\*, Ghoshal, S.\*, & De Choudhury, M. (2017). Analyzing Ideological Discourse on Social Media: A Case Study on the Abortion Discourse. Proceedings of the 2017 International Conference of The Computational Social Science Society of the Americas (CSS), (\* co-primary authors), [PDF](#).

### Invited Articles and Refereed Workshop Articles and Presentations

- W<sub>11</sub> 2022 SCP **Saha, K.**, Liu, Y., Vincent, N., Chowdhury, F. A., Neves, L., Shah, N., & Bos, M. W. (2022). AdverTiming Matters. Society for Consumer Psychology, [PDF](#).
- M<sub>1</sub> 2021 XRDS **Saha, K.** and De Choudhury, M. (2021). Assessing the Mental Health of College Students by Leveraging Social Media Data. ACM XRDS, [PDF](#).
- DC 2020 CSCW DC **Saha, K.** (2020). Computational and Causal Examinations of Wellbeing in Situated Contexts by Leveraging Social Media and Multimodal Data. In CSCW 2020 Doctoral Consortium, [PDF](#).
- W<sub>10</sub> 2021 FOSINT Chowdhury, F. A., Saha, D., Hasan, M. R., **Saha, K.**, & Abdullah, M. (2021). Examining Factors Associated with Twitter Account Suspension Following the 2020 U.S. Presidential Election. International Symposium on Foundations of Open Source Intelligence and Security Informatics, colocated with ASONAM'21.
- W<sub>9</sub> 2020 New Future of Work Das Swain, V.\*, **Saha, K.\***, Abowd, G. D., & De Choudhury, M. (2020). Social and Ubiquitous Technologies for Future of Worker Wellbeing. In Microsoft Research Symposium on the New Future of Work, (\* co-primary authors), [In Highlighted Talks](#), [PDF](#).
- W<sub>8</sub> 2020 WristSense, IEEE PerCom **Martinez, G. J.\***, Mattingly, S. M.\*, Young, J., Faust, L., Dey, A.K., Campbell, A.T., De Choudhury, M., Mirjafari, S., Nepal, S., Robles-Granda, P., **Saha, K.**, & Striegel, A. (2019). Improved Sleep Detection Through the Fusion of Phone Agent and Wearable Data Streams. In WristSense 2020: Workshop on Sensing Systems and Applications Using Wrist Worn Smart Devices, colocated with IEEE PerCom, (\* co-primary authors), [Best Paper Honorable Mention](#), [PDF](#).
- W<sub>7</sub> 2019 ITU Kaleidoscope **Saha, K.**, Das Swain, V., Yoo, D. W., Abowd, G. D., & De Choudhury, M. (2019). Tesserae: Multimodal Sensing To Model Individual Differences and Job Performance at Workplaces. In ITU Kaleidoscope Demos 2019.
- W<sub>6</sub> 2019 ITU Kaleidoscope **Saha, K.\***, Moshed, M. B.\*, Moon, S., O'Connor, J., Das, S., Abowd, G. D., Ploetz, T., & De Choudhury, M. (2019). Understanding Health-Oriented Privacy Perceptions Regarding Ubiquitous Technology Use. In ITU Kaleidoscope Demos 2019, (\* co-primary authors).

- W<sub>5</sub> 2019 **Saha, K.**, Chandrasekharan, E., & De Choudhury, M. (2019). Hateful Speech in Online College Communities. Norms, ICWSM In Managing and Designing for Norms in Online Communities Workshop, colocated with ICWSM 2019, [PDF](#).
- W<sub>4</sub> 2019 Hickman, L., **Saha, K.**, De Choudhury, M., & Tay, L. (2019). Automated Tracking of Components of Job Satisfaction via Text Mining of Twitter Data. In Machine Learning Symposium, colocated with Annual Society for Industrial and Organizational Psychology Conference (SIOP 2019), [PDF](#).
- W<sub>3</sub> 2019 Lin, S., Mattingly, S. M., Han, X., Audia, P., Campbell, A. T., Das Swain, V., De Choudhury, M., D'Mello, S.K., Dey, A.K., Gao, G., Gregg, J.M., Jagannath, K., Jiang, K., Liu, Q., Mark, G., Martinez, G.J, Masaba, K., Moskal, E., Mulukutla, R., Nies, K.A., Reddy, M. D., Robles-Granda, P., **Saha, K.**, Sirigiri, A., & Striegel, A., Chawla, N.V., (2019). Sensing Personality to Predict Job Performance. In the Future of Work Workshop, colocated with ACM CHI 2019, [PDF](#).
- W<sub>2</sub> 2018 **Saha, K.**, Ernala, S., Rizuto, C., Torous, J., & De Choudhury, M. (2018). A Study of Mental Health Awareness Campaigns on Social Media. In Social Media and Health (SMHealth) Workshop, colocated with ICWSM 2018.
- W<sub>1</sub> 2017 **Saha, K.**, Weber, I., Birnbaum, M.L., and De Choudhury, M. (2017). Characterizing Awareness of Schizophrenia Among Facebook Users by Leveraging Facebook Advertisement Estimates. In Mental Health Symposium, colocated with CHI 2017.

## Patents

- 2020 Bos, M. W., Liu, Y., **Saha, K.**, Shah, N., Neves, L., Vincent, N., & Chowdhury, F. A., Timing Advertising to User Receptivity (1)., *US Patent Filed, Dec'20*.
- 2020 Bos, M. W., Liu, Y., **Saha, K.**, Shah, N., Neves, L., Vincent, N., & Chowdhury, F. A., Timing Advertising to User Receptivity (2)., *US Patent Filed, Dec'20*.
- 2015 Patel, L., **Saha, K.**, Das, S., & Biswas, A., A System and Method for Sentiment Analysis of Text., *US Provisional Patent Filed, Aug'14, US Patent Filed, Aug'15*.
- 2015 Patel, L., **Saha, K.**, Das, S., & Biswas, A., A System and Method for scalable and continuous learning and annotation of data., *US Provisional Patent Filed, Mar'15*.
- 2014 Bose, A., **Saha, K.**, Das, S., & Biswas, N., A System and Method for Predicting Compliance Issues., *US Provisional Patent Filed, Feb'14*.

## Experience

- Oct 2021 – **Senior Researcher**, *Microsoft Research*, Montreal.  
I work closely with Fairness, Accountability, Transparency, and Ethics in AI (FATE) group. My research is in computational social science, social computing, and human-centered machine learning where I adopt methods from machine learning, natural language, and causal inference analysis to examine wellbeing.
- Aug 2016 – **Graduate Research Assistant**, *Georgia Tech*, School of Interactive Computing.
- May 2021 Advised by Dr. Munmun De Choudhury, as a Ph.D. (Computer Science) student, I specialize in social computing. Broadly motivated in topics and methods related to computational social science and human-centered machine learning. In particular, my research interest involves social media sensing of mental wellbeing in situated communities, such as college campuses and workplaces.
- May 2020 – **Research Intern**, *Snap Research*.
- Aug 2020 Advised by Dr. Maarten Bos, I conducted causal studies on understanding the effect of timing advertisements, and how people's momentary user states are associated with ad consumption on social media. This research is motivated to contribute towards better and privacy-preserving understanding of human behavior and improving content recommendation. This work led to a publication at ACM CHI 2021 [C<sub>16</sub>].



- May 2019 – **Research Intern**, *Microsoft Research*, India.
- Aug 2019 Advised by Dr. Amit Sharma, I conducted retrospective case-control based causal study in observational setting. In particular, we investigated the question of *what* factors lead to effective psychosocial outcomes in online mental health communities. We quantified individuals' psychosocial outcomes in an online mental health community, and then compared the social support based interventions received by individuals who improved the most (Case) against those who improved the least (Control). This work led to a publication at AAAI ICWSM 2020 [C<sub>9</sub>].
- May 2018 – **Visiting Scholar**, *Max Planck Institute for Software Systems (MPI-SWS)*.
- July 2018 Advised by Dr. Krishna P. Gummadi, I worked on the problem of how social media based advertising platforms enable advertisers to micro-target their audience in a malicious way. We experimentally studied how Facebook ads from the Russian IRA run prior to 2016 U.S. elections exploited Facebook's targeted advertising platform to target ads on divisive or polarizing topics (eg, immigration, race-based policing) at vulnerable sub-populations. This work led to a publication at ACM FAT\* 2019 [C<sub>4</sub>]
- May 2017 – **Research Intern**, *Fred Hutch*, Hutch Data Commonwealth.
- July 2017 Advised by Dr. Naveen Ashish, I worked in the domain of biomedical data sciences and computational social science. I examined high dimensional machine learning using genomics data to predict the risk of Colorectal Cancer. I also worked on quantifying the 'impact' of tweets to analyze the outreach of Cancer Research information and awareness.
- Dec 2012 – **Senior Researcher**, *Abzooba*, X, NLP & Data Sciences R&D.
- Aug 2016 As the product development lead of XPresso, Abzooba's flagship product, I conceptualized techniques, and developed modules to extract information in an end-to-end automated, scalable, and efficient fashion. I worked on problems relating to NLP, machine learning, and predictive analytics, across the domains of finance, retail, and healthcare. I developed the Continuous Learning System (CLS), and led my team to win a Hackathon for Compliance Risk conducted by a U.S. retail giant where we developed the Compliance Risk Index (CRIX). My work was a part of three patents at Abzooba.
- o NLP problems such as aspect based sentiment analysis, emotion categorization, document classification, semantic search, trending topics detection, ontology building, and so on.
  - o NLP techniques like Semantic Role Labeling, Dependency Parsing, Word-Vectors, Topic Modeling, Latent Semantic Hashing.
  - o Data Sciences problems like predicting compliance risk, member expenses, distributor costs, etc.
- Sep 2013 – **Visiting Faculty Member**, *Praxis Business School*.
- Jul 2014 Conducted courses on Big Data Analytics and Retail Analytics. Subjects included Hadoop, Map Reduce, Unix and Programming fundamentals, and Natural Language Processing.
- Aug 2012 – **Junior Research Associate**, *Infosys*, Infosys Labs, R&D.
- Nov 2012 Conceptualized & implemented an information extraction tool from unstructured financial reports. Contributed in ideation of a semantic similarity based recommendation system of research projects.
- May 2011 – **Research Intern**, *Siemens*, Corporate Technologies R&D.
- July 2011 Set up a Hadoop cluster of 30 computers, installed Mahout and Katta for running jobs. Developed a tool for accessing Lucene indexes to search and analyze their content based on parameters.

## Awards, Fellowships, & Highlights

- 2020 Recipient of the Snap Research Fellowship Award (USD \$10,000).
- 2020 Recipient of the GVVU Foley Scholarship Award (USD \$5,000).
- 2020 Selected for CSCW 2020 Doctoral Consortium (Full Funding).
- 2020 Best Paper Honorable Mention at WristSense 2020 [W<sub>8</sub>].
- 2019 Outstanding Study Design Paper Award at ICWSM 2019 [C<sub>9</sub>].
- 2019 Finalist in Symantec Graduate Research Fellowship Award.
- 2014 Won Data Science Hackathon on Compliance Risk Prediction, organized by a U.S. Retail Giant.
- 2008 Qualified in Top 0.5% at IITJEE 2008 and Top 0.3% at AIEEE 2008.
- 2006 Awarded National Talent Search Examination (NTSE) Scholarship by NCERT, Govt. of India.

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## Talks and Demos

- 2021 Computational and Causal Approaches on Social Media and Multimodal Sensing Data: Examining Wellbeing in Situated Contexts.
- o National University of Singapore
  - o Sabarmati Young Researcher Seminar, IIT Gandhinagar
  - o University of South Carolina
  - o University of Illinois, Chicago
  - o Temple University
  - o Microsoft Research, India
  - o Adobe Research
  - o Drexel University
  - o Georgia State University
  - o University of Pittsburgh
  - o GVU Brown Bag
  - o Georgia Tech, Ubicomp
  - o Microsoft Applied Research Invited Talk Series: Rising Stars
  - o Microsoft Research, Montreal
- 2021 Panelist, *UGCL Affinity Group Social at EACL*.
- 2020 Social Media Reveals Psychosocial Effects of the COVID-19 Pandemic, *GVU Research Showcase*.
- 2020 AdverTiming Matters: Examining User Ad Consumption for Effective Ad Reallocation on Social Media, *Snap Research*.
- 2020 Computational and Causal Approaches on Social Media and Multimodal Data For Wellbeing, *TCS Innovation Research Labs*.
- 2019 A Social Media Study on The Effects of Psychiatric Medication Use, *Microsoft Research*.
- 2019 Tesseract: Measuring Role Ambiguity Using LinkedIn Data, *GVU Research Showcase*.
- 2019 Tesseract: Modeling Organizational Culture Using Glassdoor Data, *GVU Research Showcase*.
- 2019 A Social Media Study on The Effects of Psychiatric Medication Use, *GVU Research Showcase*.
- 2018 Tesseract: Multimodal Sensing To Model Individual Differences and Job Performance at Workplaces, *GVU Research Showcase*.
- 2017 Examining Colorectal Cancer Risk using SNPs, *Fred Hutch*.
- 2017 Using Social Media to Model Stress in College Campuses Around Violent Incidents, *GVU Research Showcase*.
- 2016 CampusLife: Understanding Student Mental Wellbeing with Multimodal Sensing, *GVU Research Showcase*.
- 2016 Using Facebook Ad Audience Estimates to Study Psychosis Awareness in the US, *GVU Research Showcase*.
- 2016 An Hybrid Approach for Knowledgebase Buildup and Lookup, *Georgia Tech, COC*.

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## Media Coverage

- 2020 Kovid-19 sosyal medyanın 'psikolojisini' etkiledi, *Sabah*, [Link](#).
- 2020 Is Everybody Doing ... OK? Let's Ask Social Media: Researchers are looking at online behavior to gauge public mental health. The results aren't pretty., *The New York Times*, [Link](#).
- 2020 High levels of pandemic-induced anxiety, depression observed in social media posts., *CBC Radio*, [Link](#).
- 2020 Active shooter drills are meant to prepare students. But research finds 'severe' side effects., *NBC News*, [Link](#).
- 2020 Georgia Tech researchers find active shooter drills in schools may increase anxiety, depression for several months., *11Alive*, [Link](#).

- 2020 Study links active shooter drills in schools to increased depression and anxiety., *The Hill*, Link.
- 2020 Study finds active shooter drills have negative impacts on students., *The Commonwealth Times*, Link.
- 2020 New Machine Learning Method Amplifies 'Voice of the People' to Reveal Workplace Culture., *Georgia Tech College of Computing Press*, Link.
- 2019 IC Researchers Awarded Outstanding Study Design Paper Award at ICWSM-19., *Georgia Tech School of Interactive Computing Press*, Link.
- 2019 Researchers Use Social Media to Model Stress Following Incidents of Gun Violence on Campus., *Georgia Tech School of Interactive Computing Press*, Link.
- 2018 Language Use on Social Media Could Provide an Unobtrusive Measure of Student Stress Levels Following Incidents of On-Campus Violence., *GVU Center*, Link.

## Miscellaneous

Skills and Interest	Computational Social Science, Causal Inference, Crisis Informatics, Social Computing, Mental Health, Wellbeing, Natural Language, Time Series, Statistical Modeling, Machine Learning, Data Science
Reviewing (Journals)	J. Medical Internet Research (JMIR), IEEE Trans. Affective Computing (TAFF), PLOS One, ACM Trans. Computer-Human Interaction (TOCHI), J. Psycholinguistic Research (JOPR), Nature Scientific Reports, ACM Trans. Social Computing (TSC), ACM Trans. Web (TWEB), J. Homosexuality, J. Family Violence, EPJ Data Science, Information Processing & Management (IPM), Early Intervention in Psychiatry, International Journal of Psychophysiology (INTPSY), PACM Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), ACM Digital Threats (DTRAP), Discourse Processes, Communications of ACM (CACM), Mental Health & Prevention
Reviewing (Conferences)	ACM CSCW (2017, 2018, 2019, 2020, 2021, 2022), ACM CHI (2017, 2018, 2019, 2020*, 2021*), EMNLP (2021), WebConf (2019, 2020, 2021), AAAI ICWSM (2019, 2020, 2021), ACII (2019), ACL-IJCNLP (2020, 2021), EACL-HCINLP (2021) (* <a href="#">Special Recognition for Outstanding Reviews</a> )
SPC/PC Member	ACM CSCW (2022), AAAI ICWSM (2019, 2020, 2021, 2022), WebConf (2020, 2021, 2022), ACM WebSci (2020, 2021), ASONAM (2019), EMNLP W-NUT (2019, 2020), ACII ML for Mental Health Workshop (2019)
Org. Comm.	Web Chair (AAAI ICWSM 2020)
Mentoring (at Georgia Tech)	<i>Graduate students</i> : Haomin Lin, Shrija Mishra, Pranshu Gupta, Asra Yousuf, Manikanta D. Reddy, Benjamin Sugar, Jayant Jain, Jyoti Narang, Sheryl Ratnam, Kunal Agarwal, Amelia Glaese, Andrea Hu, Dong Whi Yoo, Akshay Agarwal, Sherry Yoo; <i>Undergraduate students</i> : Caroline Ridley, Sparsh Kudrimoti, Nicholas Jaffe, Jordyn Seybolt, Sarah Yoo, Chaitanya Konjeti, Tushna Eduljee, Yujia Gao, Abhirup Ghosh, Christin Avery Timmons, Victor Renard Hill Jr., Sang-Chan Kim, Tahirah Ahmad, Hemang Rajvanshy, Soo Aah Moon, James O'Connor
Programming Languages	Python, R, Java, C, Bash, HTML, CSS, Javascript English, Bengali, Hindi