Sharath Chandra Guntuku

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in LinkedIn • ⌗ Github

Education

Nanyang Technological University (NTU)　　　　　　　　　　**Singapore**
Ph.D., Computer Science, GPA – 4.7/5.0　　　　　　　　　　*2013 - 2017*
Advisor: Lin Weisi, PhD
Thesis: Modeling User Factors in Multimedia Preferences

Birla Institute of Technology & Science (BITS) - Pilani　　　　　　　**India**
B.E. (Hons), Computer Science, GPA – 8.99/10.0　　　　　　　　*2009 - 2013*
Advisor: Chittaranjan Hota, PhD
Thesis: Detecting Security Threats in P2P Networks using Machine Learning

Professional Appointments

Assistant Professor (Research)　　　　　　**University of Pennsylvania, U.S.A**
Computer and Information Science　　　　　　　　　　*May 2020 – now*
I direct the Computational Social Listening Lab focused on building methods for cross-cultural and cross-lingual computational psychology and digital health research with large-scale user-generated text, image, and sensor data to answer questions on geo-spatial and temporal aspects of human behavior.

Senior Fellow
Leonard Davis Institute of Health Economics　　　　　　　　　*June 2020 – now*

Research Scientist
Penn Medicine Center for Digital Health　　　　　　　　　　*Sep 2018 – now*
I lead initiatives on mining social media data to understand health behaviors, supplement clinical diagnoses and facilitate early and personalized interventions for improving treatments and well-being of patients.

Postdoctoral Researcher
Penn Medicine Center for Digital Health　　　　　　　　　*Apr 2017 – Aug 2018*

Visiting Scholar
World Well-Being Project　　　　　　　　　　　　　　*Aug 2016 – Mar 2017*

Research Intern　　　　　　　　　　　**Panasonic R&D, Singapore**
Deep Learning for 3D Face Recognition　　　　　　　　　　*Jan – Jun 2016*

Grants & Fellowships

Total funding received as:
– Principal Investigator (PI): $4,423,449
– co-Investigator (co-I): >$300,000 (for my group)

Active ....

G6. **National Institutes of Health - NIMHD**　　　　　　　　**R01MD018340-01**
Principal Investigator (PI), $3.8M　　　　　　　　　　　　*2022-2027*
Investigating and identifying the heterogeneity in COVID-19 misinformation exposure on social media among Black and Rural communities to inform precision public health messaging

G5. **Global Engagement Fund**
(PI) with co-PI Bakas, $128K   *2023-2025*
Clinical Multimodal Integration for Stratification of Glioblastoma Patients

G4. **Penn Medical Communication Pilot Grant**
(co-PI) co-PI Agarwal, $50K   *2024-2025*
Testing the effect of content popularity on trust in health information within a clinical setting

G3. **Penn Community Collaboratory for Co-Creation**
(co-PI) co-PI Mathiyazhagan and Choi, $59,863; $25,863 my team   *2024-2025*
Digital Healing: Co-Creating Youth Digital Creative Arts Space for Community Wellbeing

G2. **Global Engagement Fund - India**
(PI), $94,534   *2022-2024*
Computational Social Listening of Vaccine Attitudes in India to Increase Provider Efficacy

G1. **National Institutes of Health - NCI**   **R37CA259210**
(co-I) PI: Kornides   *2022-2027*
An Inoculation Theory-Based Messaging Intervention Addressing Misinformation About HPV Vaccine on Social Media: the Inoculate for HPV Vaccine Randomized Controlled Trial

Completed...

G9. **World Bank Group**
(PI), $49,309   *2021-2024*
Computational Social Listening for Crisis Informatics

G8. **Penn University Research Fund**
(PI), $49,951   *2022-2023*

G7. **National Institutes of Health - NICHD**   **R01HD087363-02**
(co-I) PI: Alpern, $73,862   *2021-2023*
PED Screen: Pediatric Sepsis EHR Registry, Clinical Outcomes, and Predictive Model

G6. **Penn Medical Communication Pilot Grant**
(co-PI) co-PI Buttenheim, $50K   *2022-2023*
Communicating with parents about the COVID-19 vaccine: A natural language processing analysis of public opinion to inform clinical guidance

G5. **National Institutes of Health - NHLBI**   **R01HL141844**
(Lead Computer Scientist) PI: Merchant   *2018-2024*
Digital Phenotyping and Cardiovascular Health

G4. **Penn SEAS/SOM Trustorthy AI for Medicine**
(PI) with co-PI Bakas, $100K   *2022-2023*
Multimodal explainable AI for prognostic stratification of glioblastoma patients

G3. **National Institutes of Health - NIDA**   **R21DA050761**
(Lead Computer Scientist) PI: Merchant   *2018-2023*
Analyzing Online Reviews to Evaluate Quality of Care at Substance Use Disorder Treatment Facilities

G2. **Global Engagement Fund - China**
(co-PI) PI: Ungar, $100K   *2020-2021*

G1. **National Institutes of Health - NIMH**   **R01MH116884**
(co-I) PI: Barnett   *2019-2022*
Statistical methods in mHealth to signal interventional needs for mental health patients

Publications

Citations: 3930; i10-index: 60; h-index: 34 [Google Scholar Link].
Acceptance rate of AAAI ICWSM, CSCW: 20-25%;
Impact Factors of JAMA Open: 13.37; npj DM: 11.6; PNAS: 11.2; IEEE TIP: 10.8; JMIR: 5.4; JGIM: 5.1
Senior author articles underlined.

Book Chapters

B1. Interactive Data Visualization with Python: Present your data as an effective and compelling story, Packt Publishing, ISBN-13: 978-1838648350 ISBN-10: 1838648, 2019 [Link]

Refereed Journal Articles

J54. Rai, S., Stade, E., Giorgi, S., Francisco, A., Ungar, L. H., Curtis, B., **Guntuku, S. C.** (2024). Key language markers of depression on social media depend on race. Proceedings of the National Academy of Sciences (PNAS).

J53. Liou, G., Mittal, J., Sehgal, N. K., Tay, L., Ungar, L., & **Guntuku, S. C.** (2023). The online language of work-personal conflict. Scientific Reports, 13(1), 21019.

J52. Hou, X. D., **Guntuku, S. C.**, Cho, Y. M., Sherman, G., Zhang, T., Li, M., ... & Tay, L. (2024). A cross-cultural examination of temporal orientation through everyday language on social media. Plos one, 19(3), e0292963.

J51. Liou, G., Mittal, J., Sehgal, N. K., Tay, L., Ungar, L., & **Guntuku, S. C.** (2023). The online language of work-personal conflict. Scientific Reports, 13(1), 21019.

J50. Agarwal, A. K., Mittal, J., Tran, A., Merchant, R., & **Guntuku, S. C.** (2023). *"Investigating Social Media to Evaluate Emergency Medicine Physicians' Emotional Well-being During COVID-19"*. JAMA Network Open, 6(5), e2312708-e2312708.

J49. Wanchoo, K., Abrams, M., Merchant, R. M., Ungar, L., & **Guntuku, S. C.** (2023). *"Reddit language indicates changes associated with diet, physical activity, substance use, and smoking during COVID-19."* Plos one, 18(2), e0280337.

J48. Golos, A. M., **Guntuku, S. C.**, Piltch-Loeb, R., Leininger, L. J., Simanek, A. M., Kumar, A., ... & Buttenheim, A. M. (2023). *"Dear Pandemic: A topic modeling analysis of COVID-19 information needs among readers of an online science communication campaign."* PloS one, 18(3), e0281773.

J47. Liu, T., Ungar, L. H., Curtis, B., Sherman, G., Yadeta, K., Tay, L., ... & **Guntuku, S. C.** (2022). *"Head versus heart: social media reveals differential language of loneliness from depression."* npj Mental Health Research, 1(1), 1-8.

Abrams, M. P., Merchant, R. M., Meisel, Z. F., Pelullo, A. P., **Guntuku, S.C.**, & Agarwal, A. K. (2023). Association Between Online Reviews of Substance Use Disorder Treatment Facilities and Drug-Induced Mortality Rates: Cross-Sectional Analysis. JMIR AI, 2, e46317

J46. Southwick, L., Francisco, A., Bradley, M., Klinger, E., & **Guntuku, S. C** (2022). *"Characterizing Responses to COVID-19 Vaccine Promotion on TikTok"*. American Journal of Health Promotion, 08901171221141974.

J45. Andy, A., Sherman, G., & **Guntuku, S. C.** (2022). *"Understanding the expression of loneliness on Twitter across age groups and genders"*. Plos ONE, 17(9), e0273636.

J44. Merchant, R.M., Southwick, L., Beidas, R., Mandell, D.S., **Guntuku, S.C.**, Pelullo, A., Yang, L., Mitra, N., Curtis, B., Ungar, L., & Asch, D., (2022) *"Effect of Integrating Patient-Generated Digital Data Into Mental Health Therapy: A Randomized Controlled Trial"*. Psychiatric Services

J43. Dixon, E. L., Joshi, S. M., Ferrell, W., Volpp, K. G., Merchant, R. M., & **Guntuku, S. C.** (2022). *"COVID-19 contact tracing app reviews reveal concerns and motivations around adoption"*. PloS ONE, 17(9), e0273222.

J42. Seltzer, E. K., **Guntuku, S. C.**, Lanza, A. L., Tufts, C., Srinivas, S. K., Klinger, E. V., ... & Merchant, R. M. (2022). *Patient Experience and Satisfaction in Online Reviews of Obstetric Care: Observational Study*. JMIR Formative Research, 6(3), e28379.

J41. Agarwal, A. K., **Guntuku, S. C.**, Meisel, Z. F., Pelullo, A., Kinkle, B., & Merchant, R. M. (2022). *Analyzing Online Reviews of Substance Use Disorder Treatment Facilities in the USA Using Machine Learning*. Journal of General Internal Medicine, 37(4), 977-980.

J40. Jakhetiya, V., Chaudhary, S., Subudhi, B. N., Lin, W., & **Guntuku, S. C.** (2022). *Perceptually Unimportant Information Reduction and Cosine Similarity-Based Quality Assessment of 3D-Synthesized Images*. IEEE Transactions on Image Processing, 31, 2027-2039.

J39. Jakhetiya, V., Mumtaz, D., Subudhi, B. N., & **Guntuku, S. C.** (2022). *Stretching artifacts identification for quality assessment of 3D-synthesized views*. IEEE Transactions on Image Processing, 31, 1737-1750.

J38. Eichstaedt, J. C., Sherman, G. T., Giorgi, S., Roberts, S. O., Reynolds, M. E., Ungar, L. H., & **Guntuku, S. C.** (2021). *The emotional and mental health impact of the murder of George Floyd on the US population.* Proceedings of the National Academy of Sciences (PNAS), 118(39), e2109139118.

J37. Mumtaz, D., Jakhetiya, V., Nathwani, K., Subudhi, B. N., & **Guntuku, S. C.** (2021). *Non-Intrusive Perceptual Audio Quality Assessment for User-Generated Content Using Deep Learning*. IEEE Transactions on Industrial Informatics.

J36. Southwick, L., **Guntuku, S. C.**, Klinger, E. V., Seltzer, E., McCalpin, H. J., & Merchant, R. M. (2021). *Characterizing COVID-19 content posted to TikTok: public sentiment and response during the first phase of the COVID-19 pandemic*. Journal of Adolescent Health, 69(2), 234-241.

J35. **Guntuku, S. C.**, Buttenheim, A. M., Sherman, G., & Merchant, R. M. (2021). *Twitter discourse reveals geographical and temporal variation in concerns about COVID-19 vaccines in the United States*. Vaccine, 39(30).

J34. **Guntuku S.C.**, Klinger E., McCalpin H., Ungar L., Asch D., Merchant R., *"Social media language of healthcare super-utilizers"*, npj Digital Medicine, 2021

J33. **Guntuku, S. C.***, Ojo, A.*, Zheng, M., Beidas, R. S., & Ranney, M. L. (2021). *"How Health Care Workers Wield Influence Through Twitter Hashtags: Retrospective Cross-sectional Study of the Gun Violence and COVID-19 Public Health Crises"*. JMIR Public Health and Surveillance, 7(1), e24562. (* - denotes equal contribution)

J32. **Guntuku SC**, Purtle J, Meisel ZF, Merchant RM, Agarwal A. *"Partisan Differences in Twitter Language among United States Legislators during COVID-19: A Cross-Sectional Study"*. J Med Internet Res. 2021 doi: 10.2196/27300. Epub ahead of print. PMID: 33939620.

J31. Agarwal, A. K., **Guntuku, S. C.**, Meisel, Z. F., Pelullo, A., Kinkle, B., & Merchant, R. M. (2021). *"Analyzing Online Reviews of Substance Use Disorder Treatment Facilities in the USA Using Machine Learning"*. Journal of General Internal Medicine, 1-4.

J30. Southwick, L., **Guntuku, S.C.**, Klinger, E.V., Pelullo, A., McCalpin, H., Merchant, R.M., *"The role of digital health technologies in COVID-19 surveillance and recovery: A specific case of Long Haulers"*, (2021). International Review of Psychiatry (IIRP) DOI: 10.1080/09540261.2020.1854195.

J29. Andy, A.U., G**untuku, S.C.**, Adusumalli, S., Asch, D.A., Groeneveld, P.W., Ungar, L.H., Merchant, R.M. *"Predicting Cardiovascular Risk Using Social Media Data: Performance Evaluation of Machine-Learning Models"* JMIR Cardio 2021;5(1):e24473

J28. Ortiz R, Southwick L, Schneider R, Klinger EV, Pelullo A, **Guntuku SC**, Merchant RM, Agarwal AK. *"Improving Mood Through Community Connection and Resources Using an Interactive Digital Platform: Development and Usability Study"*, JMIR Ment Health 2021;8(2):e25834, doi: 10.2196/25834

J27. Mahajan, P., Jakhetiya, V., Abrol, P., Lehana, P., Badri, S., **Guntuku S.C.**, *"Perceptual Quality Evaluation of Hazy Natural Images"*, IEEE Transactions of Industrial Informatics, 2021

J26. **Guntuku S.C.**, Sherman G., Stokes D.C., Agarwal A., Seltzer E., Merchant R.M, Ungar L.H. *"Tracking mental health and symptom mentions on Twitter during COVID-19"* , 2020 Journal of general internal medicine, 2020

J25. **Guntuku S.C.**, Schwartz H.A., Gaulton J., Stokes D.C., Asch D.A, Kashyap A., Ungar L.H., Merchant R.M *"Variability in Language used on Social Media prior to Hospital Visits"*, Nature Scientific Reports, 2020

J24. **Guntuku S.C.**, Gaulton J., Seltzer E., Asch D.A., Srinivas S., Ungar L.H., Mancheno C., Klinger E.V, Merchant R.M, *"Studying social media language changes associated with pregnancy status, trimester, and parity"*, 2020, Women's Health

J23. Jaidka, K., **Guntuku, S. C.**, Lee, J. H., Luo, Z., Buffone, A., & Ungar, L. H. (2020). *"The rural–urban stress divide: Obtaining geographical insights through Twitter"*. Computers in Human Behavior

J22. Simchon A., **Guntuku S.C.**, Simhon R., Ungar L.H, Giliad M., *"Political Depression? A Big-Data, Multi-Method Investigation of Americans' Emotional Response to the Trump Presidency"*, Journal of Experimental Psychology: General, 2020,

J21. Stokes, D.C., Andy, A., **Guntuku, S.C.**, Ungar, L.H. and Merchant, R.M., 2020. *"Public priorities and concerns regarding covid-19 in an online discussion forum: Longitudinal topic modeling"*. Journal of general internal medicine, p.1.

J20. **Guntuku, S. C.**, Agarwal, S., Robinson, O., Dunn, A., & Ungar, L. (2020). *"Examining the Phenomenon of Quarter-life Crisis through Artificial Intelligence and the Language of Twitter"*. Frontiers in Psychology, 11, 341. (first and second authors have equal contribution)

J19. **Guntuku S.C.**, Schneider R.C, Pelullo A., Young J.F, Wong V., Ungar L.H, Polsky D., Volpp K., & Merchant R.M. *"Characterizing and Measuring Expressions of Loneliness in Individuals using Twitter"* BMJ Open, 2019

J18. Seltzer E., Goldshear J., **Guntuku S.C.***, Grande D., Asch D., Klinger E.V., Merchant R.M, (2019, in press) *"Patients' willingness to share digital health and non-health data for research"* BMC Medical Informatics and Decision Making (* – corresponding author)

J17. Merchant, R. M., Asch, D. A., Crutchley, P., Ungar, L. H., **Guntuku, S. C.**, Eichstaedt, J. C., Hill, S., Padrez, K., Smith, R. J., & Schwartz, H. A. (2019, in press). *"Evaluating the Predictability of Medical Conditions from Social Media Posts*. PLoS One.

J16. Agarwal A.K., Wong V., Pelullo A., **Guntuku S.C.**, Polsky D., Asch D.A., Muruako J., & Merchant R.M., *"Online Reviews of Specialized Drug Treatment Facilities – Identifying potential drivers of high and low patient satisfaction"*. Journal of General Internal Medicine. 2019

J15. Yang, Q., Tufts, C., Ungar, L., **Guntuku, S.C.**, & Merchant, R. (2018). *"To retweet or not to retweet: Understanding what features of cardiovascular tweets influence their retransmission*. Journal of health communication, 23(12), 1026-1035.

J14. Samani, Z. R., **Guntuku, S. C.**, Moghaddam, M. E., Preoţiuc-Pietro, D., & Ungar, L. H. (2018). *"Cross-platform and cross-interaction study of user personality based on images on Twitter and Flickr*. PloS one, 13(7), e0198660. [Link] (* - corresponding author)

J13. Jakhetiya, V., Gu, K., Singhal, T., **Guntuku, S. C.**, Xia, Z., & Lin, W. (2018). *"A Highly Efficient Blind Image Quality Assessment Metric of 3D-Synthesized Images using Outlier Detection*. IEEE Transactions on Industrial Informatics.

J12. Zhu, Y., **Guntuku, S. C.**, Lin, W., Ghinea, G., & Redi, J. A. (2018). *"Measuring Individual Video QoE: A Survey, and Proposal for Future Directions Using Social Media*. ACM Transactions on Multimedia Computing, Communications, and Applications (TOMM), 14(2s), 30. [PDF]

J11. Jakhetiya, V., Lin, W., Jaiswal, S., Gu, K., & **Guntuku, S. C.** (2018). *"Just Noticeable Difference for natural images using RMS contrast and feed-back mechanism"*. Neurocomputing, 275, 366-376. [PDF]

J10. **Guntuku, S. C.**, Ramsay, J. R., Merchant, R. M., & Ungar, L. H. (2017). *"Language of ADHD in adults on social media"*. Journal of attention disorders, 1087054717738083. [PDF]

J9. **Guntuku, S. C.**, Yaden, D. B., Kern, M. L., Ungar, L. H., & Eichstaedt, J. C. (2017). *"Detecting depression and mental illness on social media: an integrative review"*. Current Opinion in Behavioral Sciences, 18, 43-49. [PDF]

J8. Jakhetiya, V., Lin, W., Jaiswal, S. P., **Guntuku, S. C.**, & Au, O. C. (2017). *"Maximum a posterior and perceptually motivated reconstruction algorithm: A generic framework"*. IEEE Transactions on Multimedia, 19(1), 93-106. [PDF]

J7. Prakhya, S. M., Liu, B., Lin, W., Jakhetiya, V., & **Guntuku, S. C.** (2017). *"B-SHOT: a binary 3D feature descriptor for fast Keypoint matching on 3D point clouds"*. Autonomous Robots, 41(7), 1501-1520.

J6. **Guntuku, S. C.**, Zhou, J. T., Roy, S., Lin, W., & Tsang, I. W. (2016). *"Understanding deep representations learned in modeling users likes"*. IEEE Transactions on Image Processing, 25(8), 3762-3774. [PDF]

J5. **Guntuku, S.C.**, Zhou, J., Roy, S., Lin, W., & Tsang, W. (2016). *"Who likes What, and Why? Insights into Personality Modeling based on Image Likes"*. IEEE Transactions on Affective Computing. [PDF]

J4. **Guntuku, S. C.**, Scott, M. J., Lin, W., & Ghinea, G. (2016). *"Do personality and culture influence perceived video quality and enjoyment?"*. IEEE Transactions on Multimedia, 18(9), 1796-1807. (first and second author have equal contribution) [PDF]

J3. **Guntuku, S. C.**, Singh, K.*, Thakur, A., & Hota, C. (2014). *"Big data analytics framework for peer-to-peer botnet detection using random forests"*. Information Sciences, 278, 488-497. (first and second author have equal contribution) [PDF]

J2. Desu, R. K., **Guntuku, S. C.**, Aditya, B., & Gupta, A. K. (2014). *"Support vector regression based flow stress prediction in austenitic stainless steel 304"*. Procedia materials science, 6, 368-375. [PDF]

J1. Gupta, A. K., **Guntuku, S. C.**, Desu, R. K., & Balu, A. (2015). *"Optimisation of turning parameters by integrating genetic algorithm with support vector regression and artificial neural networks"*. The International Journal of Advanced Manufacturing Technology, 77(1-4), 331-339. [PDF]

Peer-reviewed Conferences

C29. Cho, Y. M., Rai, S., Ungar, L., Sedoc, J., & **Guntuku, S.C** (2023, December). An Integrative Survey on Mental Health Conversational Agents to Bridge Computer Science and Medical Perspectives. In Proceedings of the 2023 Conference on Empirical Methods in Natural Language Processing (pp. 11346-11369).

C28. Mittal, J., Belorkar, A., Pokuri, V., Jakhetiya, V., & **Guntuku, S. C.** (2023, March). Language on Reddit Reveals Differential Mental Health Markers for Individuals posting in Immigration Communities. In Proceedings of the International ACM Conference on Web Science.

C27. Liu, T., Jain D., Rapole, S.R., Curtis, B., Eichstaedt, J.C., Ungar, L.H., & **Guntuku, S. C.** (2023, March). Detecting Symptoms of Depression on Reddit. In Proceedings of the International ACM Conference on Web Science.

C26. Liu, T., Giorgi, S., Tao, X., **Guntuku, S.C.**, Bellew, D., Curtis, B., Ungar, L. (2023) Different Affordances on Facebook and SMS Text Messaging Do Not Impede Generalization of Language-Based Predictive Models. In Proceedings of the International AAAI Conference on Web and Social Media

C25. **Guntuku, S.C.**, Talhelm, T., Sherman, G., Fan, A., Giorgi, S., Wei, L., Ungar, L.H. Historical patterns of rice farming explain modern-day language use in China and Japan more than modernization and urbanization. 2023, International Political Science Association Conference in Buenos Aires, 27th World Congress of Political Science.

C24. Du, Y.Y.D., Jain, D., **Guntuku, S.C.**, Hou., X., Ungar, L.H., Tay, L. "That's Interesting¡': The Language of Vocational Interests on Social Media. 2023, Proceedings of the the 83rd Annual Meeting of the Academy of Management. (**Best Paper Award**)

C23. Cui, J., Zhang, T., Jaidka, K., Pang, D., Sherman, G., Jakhetiya, V., ... & **Guntuku, S. C.** (2022, May). Social Media Reveals Urban-Rural Differences in Stress across China. In Proceedings of the International AAAI Conference on Web and Social Media (Vol. 16, pp. 114-124).

C22. Mumtaz, D., Jena, A., Jakhetiya, V., Nathwani, K., & **Guntuku, S. C.** (2022). Transformer-based quality assessment model for generalized user-generated multimedia audio content. Proc. Interspeech 2022, 674-678.

C21. Giorgi, S., **Guntuku, S. C.**, Himelein-Wachowiak, M., Kwarteng, A., Hwang, S., Rahman, M., & Curtis, B. (2022, May). Twitter Corpus of the #BlackLivesMatter Movement and Counter Protests: 2013 to 2021. In Proceedings of the International AAAI Conference on Web and Social Media (Vol. 16, pp. 1228-1235).

C20. Andy, A., Kriz, R., **Guntuku, S. C.**, Wijaya, D. T., & Callison-Burch, C. (2022, June). Did that happen? Predicting Social Media Posts that are Indicative of what happened in a scene: A case study of a TV show. In Proceedings of the Thirteenth Language Resources and Evaluation Conference (pp. 7209-7214).

C19. Chaudhary, S., Jakhetiya, V., Subudhi, B. N., Baid, U., & **Guntuku, S. C.** (2021). *"Detecting COVID-19 and Community Acquired Pneumonia using Chest CT scan images with Deep Learning"*. International Conference on Acoustics, Speech, & Signal Processing (ICASSP). (Signal Processing Grand Challenge Winner)

C18. Giorgi, S., **Guntuku, S.C.**, Eichstaedt, J., Schwartz, H., & Ungar, L.H., *"Well-Being Depends on Social Comparison: Hierarchical Models of Twitter Language Suggest That Richer Neighbors Make You Less Happy"*. 2021, AAAI Conference on Web and Social Media (ICWSM)

C17. Li, M., Hickman, L., Tay, L., Ungar, L. H., & <u>**Guntuku, S. C.**</u> *"Studying Politeness across Cultures using English Twitter and Mandarin Weibo"* (2020). ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW).

C16. **Guntuku, S. C.**, Buffone, A., Jaidka, K., Eichstaedt, J.C., & Ungar, L. (2019). *"Understanding and Measuring Psychological Stress using Social Media"*. In AAAI Conference on Web and Social Media (ICWSM).

C15. **Guntuku, S. C.**, Preoţiuc-Pietro, D., Eichstaedt, J. C. & Ungar, L. H. (2019). *"What Twitter Profile and Posted Images Reveal about Depression and Anxiety"*. In AAAI Conference on Web and Social Media (ICWSM). (Acceptance rate: 17%)

C14. **Guntuku, S. C.**, Li, M., Tay, L. & Ungar, L. H. (2019). *"Studying Cultural Differences in Emoji Usage across the East and the West"*. In AAAI Conference on Web and Social Media (ICWSM).

C13. Liu, T., Nicholas, J., Theilig, M., **Guntuku, S.C.**, Kording, K., Mohr, D.C., Ungar, L. (2019) "Machine Learning for Phone-Based Relationship Estimation: The Need to Consider Population Heterogeneity". Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies

C12. Jaiswal, S.P, Jakhetiya, V., Gu, K., **Guntuku, S.C**, Singla, A., "Frequency-Domain Analysis Based Exploitation Of Color Channels For Color Image Demosaicking". 2019 IEEE Visual Communications and Image Processing (VCIP)

C11. Jaidka, K., **Guntuku, S. C.**, & Ungar, L. H. (2018, June). *"Facebook versus Twitter: Differences in Self-Disclosure and Trait Prediction"*. In Twelfth International AAAI Conference on Web and Social Media. [PDF]

C10. **Guntuku, S. C.**, Lin, W., Carpenter, J., Ng, W. K., Ungar, L. H., & Preoţiuc-Pietro, D. (2017, June). *"Studying personality through the content of posted and liked images on Twitter"*. In Proceedings of the 2017 ACM on web science conference (pp. 223-227). ACM. [PDF]

C9. Preoţiuc-Pietro, D., **Guntuku, S. C.**, & Ungar, L. (2017, September). *"Controlling human perception of basic user traits"*. In Proceedings of the 2017 conference on empirical methods in natural language processing (pp. 2335-2341). [PDF]

C8. Roy, S., & **Guntuku, S. C.** (2016, September). *"Latent factor representations for cold-start video recommendation"*. In Proceedings of the 10th ACM Conference on Recommender Systems (pp. 99-106). ACM. [PDF]

C7. **Guntuku, S. C.**, Roy, S., Lin, W., Ng, K., Keong, N. W., & Jakhetiya, V. (2016, June). *"Personalizing User Interfaces for improving quality of experience in VoD recommender systems"*. In 2016 Eighth International Conference on Quality of Multimedia Experience (QoMEX) (pp. 1-6). IEEE. [PDF]

C6. Scott, M. J.*, **Guntuku, S. C.***, Huan, Y., Lin, W., & Ghinea, G. (2015, October). *"Modelling human factors in perceptual multimedia quality: On the role of personality and culture"*. In Proceedings of the 23rd ACM international conference on Multimedia (pp. 481-490). ACM. (* – denotes equal contribution) [PDF] (Acceptance rate: 22%)

C5. **Guntuku, S. C.**, Lin, W., Scott, M. J., & Ghinea, G. (2015, September). *"Modelling the influence of personality and culture on affect and enjoyment in multimedia"*. In 2015 International Conference on Affective Computing and Intelligent Interaction (ACII) (pp. 236-242). IEEE. [PDF]

C4. Jakhetiya, V., Lin, W., Jaiswal, S. P., Tiwari, A. K., & **Guntuku, S. C.** (2015, July). *"Observation model based perceptually motivated bilateral filter for image reconstruction"*. In 2015 IEEE International Conference on Digital Signal Processing (DSP) (pp. 201-205). IEEE.

C3. **Guntuku, S. C.**, Roy, S., & Weisi, L. (2015, June). *"Evaluating visual and textual features for predicting user likes"*. In 2015 IEEE International Conference on Multimedia and Expo (ICME) (pp. 1-6). IEEE. [PDF]

C2. **Guntuku, S. C.**, Roy, S., & Weisi, L. (2015, January). *"Personality modeling based image recommendation"*. In International Conference on Multimedia Modeling (pp. 171-182). Springer, Cham. [PDF]

C1. **Guntuku, S. C.**, Zhou, J. T., Roy, S., Weisi, L., & Tsang, I. W. (2014, November). *"Deep representations to model user likes"*. In Asian Conference on Computer Vision (pp. 3-18). Springer, Cham. [PDF] (Acceptance Rate: 3.9% Oral)

Peer Reviewed Workshop Proceedings

W18. Havaldar, S., Singhal, B., Rai, S., Liu, L., **Guntuku, S. C.** & Ungar, L. (2023, July). Multilingual Language Models are not Multicultural: A Case Study in Emotion. In Proceedings of the 13th Workshop on Computational Approaches to Subjectivity, Sentiment, & Social Media Analysis (pp. 202-214). (**Best Paper Award**)

W17. Giorgi, S., Sherman, G., Bellew, D., **Guntuku, S. C.**, Ungar, L., & Curtis, B. (2023, December). AWARE-TEXT: An Android Package for Mobile Phone Based Text Collection and On-Device Processing. In Proceedings of the 3rd Workshop for Natural Language Processing Open Source Software (NLP-OSS 2023) (pp. 102-109).

W16. Aggarwal, A., Rai, S., Giorgi, S., Havaldar, S., Sherman, G., Mittal, J., & **Guntuku S.C.** (2023, March). A Cross-Modal Study of Pain Across Communities in the United States. Companion proceedings of the 2023 World Wide Web Conference (The WebConf).

W15. Nema, A., Jakhetiya, V., Jaiswal, S., Badri, S., & **Guntuku, S. C.** (2023, September). Measuring Underwater Image Quality with Depthwise-Separable Convolutions and Global-Sparse Attention. In 2023 IEEE 25th International Workshop on Multimedia Signal Processing (MMSP) (pp. 1-6). IEEE.

W14. Ganesan, A. V., Varadarajan, V., Mittal, J., Subrahmanya, S., Matero, M., Soni, N., **Guntuku S.C.**, ... & Schwartz, H. A. (2022, July). WWBP-SQT-lite: Multi-level Models and Difference Embeddings for Moments of Change Identification in Mental Health Forums. In Proceedings of the Eighth Workshop on Computational Linguistics and Clinical Psychology (pp. 251-258).

W13. Wang, H., & **Guntuku, S. C.** (2022). A Weakly-Supervised Iterative Graph-Based Approach to Retrieve COVID-19 Misinformation Topics. arXiv preprint arXiv:2205.09416.

W12. Chaudhary, S., Jain, P., Jakhetiya, V., **Guntuku, S. C.**, & Subudhi, B. N. (2021, September). Localizing Features with Masking for Satellite and Debris Classification. In 2021 IEEE International Conference on Image Processing Challenges (ICIPC) (pp. 16-20). IEEE.

W11. Andy, A., Chu, B., Fathy, R., Bennett, B., Stokes, D., & **Guntuku, S.C**, Understanding Social Support Expressed in a COVID-19 Online Forum. 12th International Workshop on Health Text Mining and Information Analysis., 2021

W10. Santosh, R., Schwartz, H. A., Eichstaedt, J. C., Ungar, L., & **Guntuku, S. C.**, Detecting Emerging Symptoms of COVID-19 using Context-based Twitter Embeddings. In proceedings of EMNLP 2020 (Empirical Methods in NLP) workshop on COVID-19.

W9. Andy, A. & **Guntuku, S. C.**, Does Social Support (Expressed in Post Titles) Elicit Comments in Online Substance Use Recovery Forums?. In Proceedings of the Fourth Workshop on Natural Language Processing and Computational Social Science.

W8. Zamani, M., Schwartz, H. A., Eichstaedt, J. C., **Guntuku, S. C.**, Ganesan, A. V., Clouston, S., & Giorgi, S. (2020, November). Understanding Weekly COVID-19 Concerns through Dynamic Content-Specific LDA Topic Modeling. In Proceedings of the Fourth Workshop on Natural Language Processing and Computational Social Science.

W7. van Loon, A., Stewart, S., Waldon, B., Lakshmikanth, S. K., Shah, I., **Guntuku, S. C.**, Sherman, G., Zou, J., & Eichstaedt, J. C. (2020). Explaining the Trump Gap in Social Distancing Using COVID discourse. In proceedings of EMNLP 2020 (Empirical Methods in NLP) workshop on COVID-19.

W6. Li, M., **Guntuku, S. C.**, Jakhetiya, V. & Ungar, L. H. *"Exploring (Dis-)Similarities in Emoji-Emotion Association on Twitter and Weibo"*, 2019, EMOJI2019 colocated with The WebConf

W5. Matero, M., Idnani, A., Son, Y., Giorgi, S., Vu, H., Zamani, M., Limbachiya, P., **Guntuku, S.C.** and Schwartz, H.A., 2019, June. "Suicide risk assessment with multi-level dual-context language and bert". In Proceedings of the Sixth Workshop on Computational Linguistics and Clinical Psychology (pp. 39-44).

W4. **Guntuku, S. C.**, Giorgi, S., & Ungar, L. (2018, June). *"Current and Future Psychological Health Prediction using Language and Socio-Demographics of Children for the CLPysch 2018 Shared Task"*. In Proceedings of the Fifth Workshop on Computational Linguistics and Clinical Psychology: From Keyboard to Clinic (pp. 98-106). [PDF]

W3. **Guntuku, S. C.**, Qiu, L., Roy, S., Lin, W., & Jakhetiya, V. (2015, October). *"Do others perceive you as you want them to? Modeling personality based on selfies"*. In Proceedings of the 1st international workshop on affect & sentiment in multimedia (pp. 21-26). ACM. [PDF]

W2. **Guntuku, S. C.**, Scott, M. J., Yang, H., Ghinea, G., & Lin, W. (2015, May). *"The CP-QAE-I: A video dataset for exploring the effect of personality and culture on perceived quality and affect in multimedia"*. In 2015 Seventh International Workshop on Quality of Multimedia Experience (QoMEX) (pp. 1-7). IEEE. [PDF]

W1. **Guntuku, S. C.**, Narang, P., & Hota, C. (2013). *"Real-time peer-to-peer botnet detection framework based on bayesian regularized neural network"*. IEEE P2P, 2013 (Short Paper) [PDF]

Policy Publications

O1. World Bank Myanmar Economic Monitor, 2022 [Link]

Teaching

University of Pennsylvania	**Instructor**
CIS5990 / 5970: Data Science Practicum / Thesis	*Fall 2022, Spring 2023, Fall 2023*
University of Pennsylvania	**Co-Instructor**
CIS5450: Big Data Analytics: MCIT Online Program	*Summer 2022*
Nanyang Technological University	**Teaching Assistant**
CE9001: Java and Internet	*Spring 2015*
Nanyang Technological University	**Teaching Assistant**
CE1005: Digital Logic	*Fall 2014*

Advising and Mentoring

Current

- Sunny Rai, Postdoctoral Researcher, UPenn
- Leo Thorbecke, Project Manager, UPenn
- Jeffrey (Young-Min) Cho, Ph.D student, UPenn; co-advised with Lyle Ungar
- Neil Sehgal, Ph.D student, UPenn, co-advised with Lyle Ungar
- Shreya Havaldar, Ph.D student, UPenn; advised by Lyle Ungar
- Manvi Kaul, M.S. Computer Science, UPenn
- Zepu Wang, M.S. Data Science, UPenn
- Chunlu Li, M.S. Data Science, UPenn
- Reyhan Jamalova, B.S. Computer Science, UPenn (Rachcleff Scholar)
- Khushi Shelat, B.S. Economics, UPenn
- Aryan Kapadia, B.S. Computer Science, BITS-Pilani (Visiting Student)

Alumni

Graduate students

- Sukanya Joshi, M.S. Data Science, UPenn (UPenn Masters Outstanding Research Award)
- Yiling Geng, M.S. E.E. (Thesis), UPenn (UPenn Master's Outstanding Academic Award) –> PhD (Hebrew University of Jerusalem)
- Jackie Peng, M.S. Data Science, UPenn (Hon. Men. UPenn Outstanding Master's Research Award) –> PhD (UPenn)
- Karan Wanchoo, M.S. E.E. (Thesis), UPenn (UPenn Master's Research Award) –> McKinsey & Co.

- Saurabh Raut, M.S. Computer Science, UPenn –> Amazon
- Ashley Francisco, M.S. UPenn
- Bhairavi Muralidharan, M.S. Computer Science, UPenn
- Aman Kumar, M.S. Computer Science, UPenn
- Shantenu Agarwal, M.S. Bioengineering (Thesis), UPenn –> Soul Machines
- Mingyang Li, M.S. Data Science (Thesis), UPenn –> Google -> Ebay
- Agrima Seth, M.S. Computer Science (Thesis), UPenn –> Morgan Stanley -> PhD (UMich)
- Harry Wang, M.S. Computer Science, UPenn –> Roku
- Shivani Reddy, M.S. Computer Science, UPenn
- Yuchen Zhang, M.S. Data Science, UPenn
- Mohit Kumaraian, M.S. Computer Science, UPenn
- Yuchen Zhang, M.S. Data Science, UPenn
- Roshan Santosh, M.S. Data Science, UPenn –> Facebook
- Swathi Rajanna, M.S. Computer Science, UPenn –> Microsoft
- Yogitha Chilukuri, M.S. Computer Science, UPenn –> Adobe
- Xiang Cui, M.S. Computer Science, UPenn
- Zeshen, M.S. Computer Science, UPenn

Undergraduate students

- Devansh Jain, B.S. Computer Science, BITS-Pilani (Visiting Student) –> CMU
- Juhi Mittal, B.S. Computer Science, BITS-Pilani (Visiting Student) –> UCSD
- Arnav Agarwal, B.S. Computer Science, UPenn (Wharton SPUR)
- Shubham Innani, B.S. Computer Science (Visiting Student) –> IU Data Scientist
- Jesse Cui, B.S. Computer Science, UPenn –> Facebook
- Jai Thirani, B.A.S Computer Science, (Thesis) UPenn –> YCombinator (TAKT)
- Margaret Zheng, B.S. Computer Science, UPenn –> Facebook
- He Chen, B.S. Computer Science, UPenn –> Amazon Robotics
- Grace Jiang, B.S. Computer Science, UPenn
- Emily Liu, B.S. Economics, UPenn
- Angel Fan, B.S. Computer Science, UPenn -> Google
- Qingrong Ji, B.S. Computer Science, UPenn
- Harish Tata, B.E. Computer Science, GITAM –> Expedia

Invited Talks and Presentations

- **Bowling Alone: Frontiers in Loneliness Research**, Population Aging Research Center at Penn, 2024
- **Racial Heterogeneity in Language Markers of Depression**, TADA Journal Club, Emory University, 2024
- **Computational Social Listening during for Public Health**, Keynote, Amity University Confluence, 2024
- **Computational Social Listening during for Public Health**, Biomedical Data Science Seminar, Institute of Biomedical Informatics (IBI), 2023

- **Computational Social Listening during for Public Health**, Center for Safe, Explainable, and Trustworthy AI, 2023

- **Computational Social Listening during for Public Health using Social Media**, Microsoft Research India, Trustworthy AI Workshop, Bengaluru, 2023

- **Computational Social Listening during COVID-19 using Social Media**, United Nations, New York, 2022

- **Panel: Finding the missing pieces**, Conference on Missingness in Action, Stanford University, 2022

- **Panel: India in the 21st Century**, Perry World House, Philadelphia, 2022

- **Panel Chair: Promise, challenges, and risks of digital data in mental health research and care**, American Medical Informatics Association Annual Symposium, Washington DC, 2019

- **User Generated Content: Opportunities for Health Care**, Langone School of Medicine, New York University, 2019

- **Session Chair: Using Digital Data to Measure and Understand Mental Health and Well-Being**, American Psychological Association Technology, Mind and Society Conference (APA Tech), Washington DC, 2019

- **Using Social Media to Inform Healthcare**, Informatics Day, Institute of Biomedical Informatics, UPenn, May, 2019

- **Studying Cultural Differences using Language**, Behavioral Insights from Text Conference, Wharton School, January, 2019

- **Leveraging Social and Electronic Communications in Evaluation and Treatment**, Technology in Psychiatry Summit (McLean and Harvard Med. School), Boston, November, 2018

- **Session Chair: Using Social Media to measure Psychological Health and Illness: From Individuals to Communities** American Psychological Association Technology, Mind and Society Conference (APA Tech), Washington DC, April, 2018

- **Assessing ADHD from Tweets**, Society for Personality and Social Psychology (SPSP), Atlanta GA, March, 2018

- **Studying Personality through the Content of Posted and Liked Images on Twitter**, ACM Web Science, Troy NY, June, 2017

- **Studying Personality through Selfies**, University of Pennsylvania, Philadelphia PA, 2016

- **Modelling Human Factors in Perceptual Multimedia Quality: On The Role of Personality and Culture**, ACM Multimedia, Brisbane Australia, Oct, 2015

- **Deep Representations to Model User 'Likes'**, University Cultural Center, National University of Singapore, 2014.

Awards

- Best Reviewer, AAAI ICWSM 2022

- **Google Cloud COVID-19 Research Credits**, 2020

- **NVIDIA GPU Award**, 2018

- **Intel Invent50**, Finalist (among 150 teams) Personalized tourist hotspot recommender system, 2015

- **ACM Travel Grant**, ACM Multimedia, Brisbane 2015 and ACM Web Science, Troy 2017

- **Nominated for Microsoft Research Asia Fellowship**, 1 student in the department, NTU, Singapore, 2015

- **Nanyang Engineering Doctoral Research Award** (6 among 106 students), Singapore, 2013

- **Merit Scholarship**, Defence Research and Development Organization, India, 2010 & 2011

- **All India Rank 3 in National Cyber Olympiad**, India, 2007

- **Merit Certification for 100% score in IT**, Central Board of Secondary Education, India, 2007

- **National Aerospace Olympiad**, State Rank 1 and National Rank 7, Aeronautical Society of India, 2007

Professional Service

Working Group Council Member for National Institute of Minority Health and Disparity to Review Community Health and Population Science

Associate Editor for

- Nature Scientific Reports
- ACM Transactions on Computing for Healthcare (HEALTH)
- Frontiers in Psychology
- Frontiers in Digital Health

Guest Editor for

- ACM Transactions on Computing for Healthcare (HEALTH) on *Large Language Models, Conversational Systems, and Generative AI in Health*
- Nature Scientific Reports on *Social Determinants of Health Collection*

Reviewer for

- National Science Foundation Reviewer 2020, 2024
- Nature Communications
- PNAS
- BMC Psychiatry
- Scientific Reports
- American Journal of Preventive Medicine
- JAMA Network Open
- IEEE Transactions on Affective Computing
- IEEE Transactions on Image Processing
- IEEE Transactions on Multimedia
- EPJ Data Science
- ACM Conference on Computer Supported Cooperative Work
- AAAI Conference on Web and Social Media (ICWSM)
- American Medical Informatics Association Annual Symposium
- APA Technology, Mind & Society
- AMIA Applied Clinical Informatics
- International Conference on Acoustics, Speech, and Signal Processing
- International Conference on Image Processing
- PLoS One
- The Social Science Journal
- International Journal of Environmental Research and Public Health
- IEEE Transactions on Medical Imaging
- Journal of Clinical Medicine
- Society for Personality and Social Psychology Annual Symposium

University Service

- Projects Director, MSE Data Science Program, 2022-current
- Member of Search Committee for Data Scientist in Digital Health, University of Pennsylvania, 2020, 2022, 2024

Media Coverage

- **Thomson Reuters:** AI fails to detect depression signs in social media posts by Black Americans, study finds [Link]
- **Penn Today:** The language of loneliness and depression, revealed in social media [Link]
- **Penn Medicine:** COVID-19 Misinformation: The Flip Side of 'Knowledge is Power' [Link]
- **Penn Today:** Community concerns about the COVID-19 vaccine tracked by Twitter [Link]
- **PsyPost:** Anger and sadness spiked dramatically following the murder of George Floyd, particularly among Black Americans [Link]
- **Penn Today:** Reported anger, sadness, depression, and anxiety spiked after George Floyd killing [Link]
  Psypost: New research uncovers some key differences in how Republicans and Democrats tweet about COVID-19 [Link]
- **WIRED:** An AI Used Facebook Data to Predict Mental Illness [Link]
- **Twitter Official:** See how the Penn Medicine CDH uses Twitter data to understand the COVID-19 health crisis [Link]
- **The Atlantic:** What Your Facebook Posts Say About Your Mental Health [Link]
- **Twitter Official:** See how the Penn Medicine CDH uses Twitter data to understand the COVID-19 health crisis [Link]
- **The Times of India:** Twitter posts can reveal how lonely you are, says study [Link]
- **The Inquirer:** Twitter photos may help detect users with depression, anxiety [Link]
- **Penn Today** Cross-cultural similarities and differences in emoji usage [Link]
- **KYW Radio:** Social media pictures can show a lot more about your health than expected [Link]
- **Tech Times:** Twitter Users With Depression And Anxiety Tend To Post Grayscale And Low-Aesthetic Images [Link]
- **NBC News**: Mood-forecasting tech could help stop bad moods even before they strike [Link]
- **American Psychological Association**, Speaking of Psychology: Twitter and ADHD. [Link]
- **Canadian Broadcasting Corporation**: Data collection by #Facebook and other companies on OnTheMoney-CBC. [Link]
- **Mashable**: Psychographic profiling of your likes and dislikes isn't new, and it's not going away [Link]
- **Psychiatric Times**: What Twitter and Brain Imaging Reveal About ADHD. [Link]
- **Faster than Normal (#1 ADHD podcast on iTunes)**: ADHD Twitter Scientist. [Link]
- **Danish Politiken**: Technology and social media can be used to detect people with depression [Link]
- **The Conversation**: Social media can be bad for youth mental health, but there are ways it can help. [Link]
- **US News**: Can Social Media Help Improve ADHD Treatments? [Link]
- **Penn Current**: Tweets reveal emotions, behavior patterns of people who suffer from ADHD [Link]