SHARATH CHANDRA GUNTUKU

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EDUCATION

08/2013-05/2017	**PH.D. COMPUTER SCIENCE** Nanyang Technological University, Singapore GPA: 4.7 / 5.0 **Thesis:** Modeling User Factors in Multimedia Preferences **Award:** Nanyang Engineering Doctoral Scholarship (6 of 106)
08/2009-05/2013	**B.E. (HONS) COMPUTER SCIENCE** Birla Institute of Technology and Science (BITS) - Pilani, India GPA: 8.99 / 10.0 **Thesis:** Detecting Security Threats in P2P Networks using Machine Learning **Award:** DRDO Merit Scholarship 2010-2011

WORK EXPERIENCE

05/2020-now	**Assistant Professor (research track), Computer and Information Science** **Senior Fellow, Leonard Davis Institute of Health Economics** University of Pennsylvania, PA I lead a lab focused on cross-country, multidisciplinary research projects with primary data collection; we build computational models utilizing large-scale user-generated text, image, and mobile sensor data to answer questions pertaining to geo-spatial, cross-cultural, and temporal aspects of human behavior across diverse communities.
09/2018-now	**Research Scientist** Penn Medicine Center for Digital Health, PA 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 individuals.
04/2017-08/2018	**Postdoctoral Researcher, World Well-Being Project** University of Pennsylvania, PA I investigated the manifestation of conditions such as ADHD, stress, and depression on social media platforms using natural language processing and machine learning.
01/2016-06/2016	**Research Intern, Panasonic R&D, Singapore** I developed deep learning framework for facial action unit recognition to detect drowsiness in automotive drivers.

SKILLS

Programming languages	Python, R, Github, bash
Technical & research interests	Predictive Modeling, Natural Language Processing, Machine Learning Digital Health, Statistical Analysis, Computational Psychology
Languages spoken	English (fluent), Telugu (native), Hindi (fluent), Marathi (beginner)
Country exposure	India, United States, Singapore, China, Myanmar

Representative Publications

For full list, see [Google Scholar]. Current citations: 1865; i10-index: 36; h-index: 24
⋆⋆ Senior/Supervising Author

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*, 118(39). **

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*.

Guntuku, S. C., Purtle, J., Meisel, Z. F., Merchant, R. M., & Agarwal, A. (2021). Partisan Differences in Twitter Language Among US Legislators During the COVID-19 Pandemic: Cross-sectional Study. *Journal of Medical Internet Research*, 23(6), e27300.

Chaudhary, S., Sadbhawna, S., Jakhetiya, V., Subudhi, B. N., Baid, U., & **Guntuku, S. C.** (2021, June). Detecting Covid-19 and Community Acquired Pneumonia Using Chest CT Scan Images With Deep Learning. In ICASSP 2021-2021 IEEE *International Conference on Acoustics, Speech and Signal Processing (ICASSP)* (pp. 8583-8587). IEEE. **

Guntuku, S. C., Klinger, E. V., McCalpin, H. J., Ungar, L. H., Asch, D. A., & Merchant, R. M. (2021). Social media language of healthcare super-utilizers. *NPJ digital medicine*, 4(1), 1-6.

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. * first two authors contributed equally

Giorgi, S., **Guntuku, S. C.**, Eichstaedt, J. C., Pajot, C., Schwartz, H. A., & Ungar, L. H. (2021, May). Well-Being Depends on Social Comparison: Hierarchical Models of Twitter Language Suggest That Richer Neighbors Make You Less Happy. In Proceedings of the *International AAAI Conference on Web and Social Media* (Vol. 15, pp. 1069-1074).

Andy, A., Chu, B., Fathy, R., Bennett, B., Stokes, D., & **Guntuku, S. C.** (2021, April). Understanding Social Support Expressed in a COVID-19 Online Forum. In Proceedings of the 12th *International Workshop on Health Text Mining and Information Analysis* (pp. 19-27). **

Southwick, L., **Guntuku, S. C.**, Klinger, E. V., Pelullo, A., McCalpin, H., & Merchant, R. M. (2020). The role of digital health technologies in COVID-19 surveillance and recovery: a specific case of long haulers. *International Review of Psychiatry*, 1-12.

Guntuku, S. C., Sherman, G., Stokes, D. C., Agarwal, A. K., Seltzer, E., Merchant, R. M., & Ungar, L. H. (2020). Tracking mental health and symptom mentions on twitter during covid-19. *Journal of general internal medicine*, 35(9), 2798-2800.

Jaidka, K., **Guntuku, S. C.**, Lee, J. H., Luo, Z., Buffone, A., & Ungar, L. H. (2021). The rural–urban stress divide: obtaining geographical insights through Twitter. *Computers in Human Behavior*, 114, 106544.

Simchon, A., **Guntuku, S. C.**, Simhon, R., Ungar, L. H., Hassin, R. R., & Gilead, M. (2020). Political depression? A big-data, multimethod investigation of Americans' emotional response to the Trump presidency. *Journal of Experimental Psychology: General*, 149(11), 2154.

GRANTS

2021-2022	World Bank Group ($ 49,309; Role: Principal Investigator (PI))
2022-2023	Global Engagement Fund - India ($ 94,534; Role: PI)
2022-2023	Penn Medical Communication Pilot Grant ($ 50,000; Role: PI)
2022-2023	Penn University Research Fund ($ 49,951; Role: PI)
2021-2022	National Institutes of Health ($ 73,862; Role: Co-Investigator (Co-I); PI: Elizabeth Alpern)
2018-2023	National Institutes of Health (NHLBI) ($3.5 million; Role: Co-I; PI: Merchant)
2020-2021	PA State COVID-19 Response (Role: Co-I; PI: Volpp)
2019-2023	National Institutes of Health (NIMH) (Role: Co-I; PI: Barnett)
2020-2021	Penn China Research and Engagement Fund ($100,000; Role: Co-PI; PI: Ungar)
2020-2021	Google Cloud ($32,000; Role: PI)
2017	NVIDIA GPU Grant
2013-2017	Nanyang Technological University Graduate Research Scholarship (SGD $188,000)

SPEAKING ENGAGEMENTS

2019	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)
2019	Studying Cultural Differences using Language (Behavioral Insights from Text Conference, Wharton School)
2018	Leveraging Social and Electronic Communications in Evaluation and Treatment (Technology in Psychiatry Summit (McLean and Harvard Med. School), Boston)
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)
2019	Assessing ADHD from Tweets (Society for Personality and Social Psychology (SPSP), Atlanta GA)
2017	Studying Personality through the Content of Posted and Liked Images on Twitter (ACM Web Science, Troy NY)
2016	Studying Personality through Selfies, (University of Pennsylvania, Philadelphia PA)
2015	Modelling Human Factors in Perceptual Multimedia Quality: On The Role of Personality and Culture (ACM Multimedia, Brisbane Australia)
2014	Deep Representations to Model User Likes (National University of Singapore)

Media Engagements

2021	**Penn Today:** Reported anger, sadness, depression, and anxiety spiked after George Floyd killing [Link]
2021	**Psypost:** New research uncovers some key differences in how Republicans and Democrats tweet about COVID-19 [Link]
2020	**WIRED:** An AI Used Facebook Data to Predict Mental Illness [Link]
2020	**Twitter Official:** See how the Penn Medicine CDH uses Twitter data to understand the COVID-19 health crisis [Link]
2019	**The Atlantic:** What Your Facebook Posts Say About Your Mental Health [Link]
2019	**The Times of India:** Twitter posts can reveal how lonely you are, says study [Link]
2019	**The Inquirer:** Twitter photos may help detect users with depression, anxiety [Link]
2019	**Penn Today** Cross-cultural similarities and differences in emoji usage [Link]
2019	**KYW Radio:** Social media pictures can show a lot more about your health than expected [Link]
2019	**Tech Times:** Twitter Users With Depression And Anxiety Tend To Post Grayscale And Low-Aesthetic Images [Link]
2019	**NBC News:** Mood-forecasting tech could help stop bad moods even before they strike [Link]
2018	**American Psychological Association,** Speaking of Psychology: Twitter and ADHD. [Link]
2018	**Canadian Broadcasting Corporation:** Data collection by #Facebook and other companies on OnTheMoneyCBC. [Link]
2018	**Mashable:** Psychographic profiling of your likes and dislikes isn't new, and it's not going away [Link]
2018	**Psychiatric Times:** What Twitter and Brain Imaging Reveal About ADHD. [Link]
2018	**Faster than Normal (#1 ADHD podcast on iTunes):** ADHD Twitter Scientist. [Link]
2017	**Danish Politiken:** Technology and social media can be used to detect people with depression [Link]
2017	**The Conversation:** Social media can be bad for youth mental health, but there are ways it can help. [Link]
2017	**US News:** Can Social Media Help Improve ADHD Treatments? [Link]

Mentorship and Service

Mentorship	2 Ph.D, 13 Masters, 7 Bachelors Students
Service	Associate Editor: 2 journals
	Senior Program Committee/Reviewer: 20 journals/conferences