

BIOGRAPHICAL SKETCH

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NAME: Vibhuti Gupta

eRA COMMONS USER NAME (credential, e.g., agency login): VIBHUTIGUPTA

POSITION TITLE: Assistant Professor of Computer Science and Data Science

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.*)

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
Bundelkhand Institute of Engineering & Technology, Jhansi, India	B.Tech	06/2010	Computer Science
SRM University, Chennai, India	M.Tech	06/2012	Computer Science
Texas Tech University, Lubbock, TX	Ph.D.	12/2019	Computer Science
University of Michigan, Ann Arbor, MI	Postdoc	01/2021	mHealth & wearable sensors

A. Personal Statement

I have expertise in developing scalable preprocessing techniques and applying large-scale machine learning and deep-learning techniques into Big data streams, such as wearable sensor streams, Internet of things (IoT), and social media data streams. I received my Ph.D. from Texas Tech University where my research was primarily focused on developing an adaptive and scalable Big stream data pre-processing approach that leverage AI techniques and is adaptable to different data rates and data types. I developed algorithms for efficient information retrieval from large unstructured textual data stream sources such as Twitter. These approaches has been implemented in an online distributed framework (Apache Storm) which processes millions of tweets in real-time with minimum latency. We also explored IoT data streams where we developed pipelines for efficient real-time monitoring applications. Besides that, I developed a variety of analytical tools and techniques applicable in domains such as educational psychology, healthcare, and tourism.

As a postdoc fellow at University of Michigan, I developed methods to analyze large volumes of multi-parameter data (i.e. temperature, heart rate, sleep, activity/steps etc.) streams generated from Fitbit devices, and other longitudinal data (i.e., patient reported outcome, survey questionnaire, EHR variables etc.) captured from mHealth platform, for early detection of adverse clinical events in hematologic cancer patients. I strongly believe that my research experience and background will assist me in contributing to various NIH-funded projects.

B. Positions and Employment

2012 – 2015 System Engineer, Tata Consultancy Services, India
2015 – 2019 Research Assistant, Computer Science Dept., Texas Tech University, Lubbock, TX

2019 – 2019	Instructor, Computer Science Dept., Texas Tech University, Lubbock, TX
2020 – 2021	Postdoctoral Research Fellow, Department of Pediatrics, University of Michigan, Ann Arbor, MI
2021 – Present	Assistant Professor, School of Applied Computational Sciences, Meharry Medical College, Nashville, TN

Honors

2012	President award for securing first rank in Masters of Technology, SRM University
2015	Summer Research Departmental Scholarship. Texas Tech University
2015	Graduate School Fellowship, Texas Tech University
2017	Graduate School Conference Travel award, Texas Tech University

C. Contribution to Science (*Relevant to Data Science*)

1. Flora, C., Tyler, J., Mayer, C., Warner, D., Khan, S., **Gupta, V.**, Lindstrom, R., Mazzoli, A., Rozwadowski, M., Braun, M., Ghosh, M., Forger, D., Choi, S. W., Tewari, M. (2021) High-frequency temperature monitoring and computational analysis enables early detection of febrile adverse events in hematologic cancer patients, *Cancer Cell (Submitted)*.
2. **Gupta, V.**, Raj, M., Hoodin, F., Lilian, Y., Braun, T. & Choi, S. W. (2020) Electronic Health Record Portal Use by Family Caregivers of patients undergoing Hematopoietic Cell Transplantation: A National Survey Study, *JMIR Cancer (In Press)*.
3. **Gupta, V.**, Braun, T. M., Chowdhury, M., Tewari, M., & Choi, S. W. (2020) A Systematic Review of Machine Learning Techniques in Hematopoietic Stem Cell Transplantation (HSCT). *Sensors*, 20(21), 6100, DOI: 10.3390/s20216100.
4. **Gupta, V.**, Jung, K., Yoo, S. (2020) Exploring the Power of Multimodal Features for Predicting the Popularity of Social Media Image in Destination Marketing, *Multimodal Technologies & Interaction*, 4(3), 64, DOI: 10.3390/mti4030064 .
5. **Gupta, V.**, & R. Hewett. (2020) Real-time Tweet Analytics using Hybrid Hashtags on Twitter Big Data, *Information*, 11(7), 341, DOI: 10.3390/info11070341.
6. Jung, K., Lee, J., **Gupta, V.** & Cho, G. (2019) Comparison of Bootstrap Confidence Interval Methods for GSCA Using Monte Carlo Simulations. *Frontiers in psychology*, 10, 2215, DOI: 10.3389/fpsyg.2019.02215.
7. **Gupta, V.**, & Hewett, R. Adaptive Normalization in Streaming Data. *In Proceedings of 3rd International Conference on Big Data Research (ICBDR)*, Paris, France, Nov 2019.
8. **Gupta, V.**, & Hewett, R. Unleashing the Power of Hashtags in Tweet Analytics with Distributed Framework on Apache Storm. *In Proceedings of IEEE International Conference on Big Data*, Seattle, WA, USA, Dec 2018.
9. **Gupta, V.** Voice disorder detection using long short term memory (LSTM) model. *arXiv preprint arXiv:1812.01779*, 2018.
10. **Gupta, V.**, & Hewett, R. Harnessing the power of hashtags in tweet analytics. *In Proceedings of IEEE International Conference on Big Data*, Boston, MA, USA, Dec 2017.
11. Jung, K., Lee, J., **Gupta, V.**, Kim, S., & Hwang, H. Simulation Based Investigation of Optimal Modeling Approaches for SEMs with Ordinal Variables, *The NCME Annual Meeting*, Toronto, Canada, Apr 2019.

12. Jung, K., Lee, J., **Gupta, V.**, Kim, S., & Hwang, H. Application of Generalized Structured Component Analysis for Brain Connectivity Research, *KSEA West Gulf Coast Regional Conference*, Houston, TX, USA, Oct 2018.
13. Pyakurel, A., **Gupta, V.**, Li, Y., Oyedeji, B., Gittner, K., Pitalua-Rodriguez, M., Guthrie, H., Shetty, R., Mengel, S., Khan, H. MR., Vadapalli, R., & Gittner, L. A Multidisciplinary Preliminary Approach to Systems Thinking for CVD Risk Prevention, *Academy Health National Health Policy Conference*, New Orleans, LA, USA, Jun 2017.
14. Li, Y., Mengel, S., Gittner, L., Pitalua-Rodriguez, M., **Gupta, V.**, Khan, H. MR., Gittner, K., & Pyakurel, A. Relational Analysis through Graph Data Reduction Technique, American Public Health Association Annual Meeting & Expo (APHA), Atlanta, GA, USA, Nov 2017.
15. Pitalua-Rodriguez, M., Mengel, S., Gittner, L., Gittner, K., **Gupta, V.**, Pyakurel, A., Li, Y., Vadapalli, R., & Khan, H. MR. Visualizing Disease Patterns along I-20 from El Paso to Shreveport. *American Public Health Association Annual Meeting & Expo (APHA)*, Atlanta, GA, USA, Nov 2017.
16. Gittner, K., Gittner, L., Khan, H. MR, Mario Pitalua, Pitalua-Rodriguez, M., Pyakurel, A., **Gupta, V.**, & Li, Y., Contrasting Models of Cardiovascular Disease Prediction: Reevaluating Age Adjusted Variables. *American Public Health Association Annual Meeting & Expo (APHA)*, Atlanta, GA, USA, Nov 2017.

Complete List of Published Work in My Bibliography:

<https://scholar.google.com/citations?user=mRrNwEMAAAJ&hl=en>

D. Additional Information: Research Support and/or Scholastic Performance

Ongoing Research Support

None

Pending Research Support

NSF 2117282

Cao (PI)

Submitted 01/19/21

Acquisition of a High-Performance Computer System to Support Research and Training in Computational Biology and Data Science at Meharry Medical College

Role: Senior Personnel