

# Manas Gaur

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## Contact Information

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Artificial Intelligence Institute  
The University of South Carolina  
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WWW: <https://manasgaur.github.io/>

## Research Interests

Artificial Intelligence, Knowledge Graphs, Natural Language Processing, Data Science, Conversational AI, Healthcare Informatics, Crisis Informatics, Human-AI Collaboration

## Education

**The University of South Carolina**, Columbia, South Carolina, USA

Ph.D. Candidate, Artificial Intelligence Institute, August 2019 (expected graduation date: February 2022) *Transferred from Wright State University*

- Dissertation Title: Knowledge-infused Mining and Learning
- Advisor: Amit P. Sheth
- Guest Co-Editor of IEEE Internet Computing's [Special Issue](#) on Knowledge-infused Learning.

**Wright State University**, Fairborn, Ohio USA

Ph.D. Candidate, Department of Computer Science and Engineering, August 2016-2019 *Transferred from SUNY Albany*

- Advisor: Amit P. Sheth

**State University of New York (SUNY)**, Albany, New York USA

Ph.D. Student, Department of Computer Science and Engineering, August 2015-2016

- Advisor: Petko Bogdanov

**Delhi Technological University**, Delhi, India

M.Tech, Software Engineering, July 2015

- Thesis: Test Suite Prioritization and Optimization using Meta-Heuristic Algorithms
- Advisors: Daya Gupta and Vinod Panchal

**Ambedkar Institute of Technology**, Delhi, India

B.Tech, Computer Science, July 2013

- Thesis: Performance Evaluation of Mobile Adhoc Protocols in Mobility scenarios
- Advisor: Ram Shringar Raw

## Selected Honors and Awards

Microsoft Travel Award for AAAI (\$700), 2020  
University of South Carolina Travel Award for AAAI (\$500), 2020  
Dataminr AI for Social Good Fellowship (\$20000), 2019  
ACM-SIGIR Travel Grant for CIKM, Italy (\$2500), 2018  
Travel Grant for International Semantic Web Conference, Austria (\$1300), 2017 & 2018  
Eric and Wendy Schmidt Data Science for Social Good (DSSG) Fellowship (\$5000), 2017  
Travel Grant for DSSG Conference (\$500), 2017  
Travel Grant for Data for Public Policy Conference, London (\$1000), 2017  
Ministry of Human Resource and Development Scholarship (Rs. 10000 p.a.), 2013-2015  
National Talent Search Examination Scholarship (Rs. 2000 p.a.), 2008-2013  
NIIT National Industry Targeted Aptitude Test Scholarship (Rs. 10000 p.a.), 2012  
Oracle Certified Java Programmer (OJCP 6.0 and 8.0), 2011 & 2013

## Professional Experience

<b>Alan Turing Institute</b> , London, UK <i>Visiting Researcher</i>	<b>November 2021 - March 2022</b>
<b>Samsung Research America</b> , Mountain View, California, USA <i>Research AI Intern (Remote)</i>	<b>May - September 2021</b>
<b>Weill Cornell Medicine</b> , New York, New York, USA <i>Research Intern (Remote)</i>	<b>June - December 2020</b>
<b>Dataminr Inc.</b> , New York, New York, USA <i>Research Scientist and Ph.D. Fellow</i>	<b>May - August 2019</b>
<b>University of Chicago</b> , Chicago, USA <i>Data Science for Social Good Fellow</i>	<b>June - September 2017</b>
<b>State University of New York</b> , Albany, New York, USA <i>Researcher @ Data Mining and Management Lab</i>	<b>September 2015 - May 2016</b>
<b>National University of Singapore</b> , School of Computing, Singapore <i>Summer Research Intern</i>	<b>May - June 2015</b>
<b>Terrain Research Laboratory</b> , Defense Research, India <i>Research Trainee</i>	<b>September 2013 - October 2014</b>

## Publications

- Articles in peer-reviewed journals and book chapters**
- FM 2022** Spinning words as disguise: Shady services for ethical research?  
Joseph Reagle, **Manas Gaur**, *Accepted in First Monday* [reduced draft](#)
- JMIR 2021** Knowledge-infused Abstractive Summarization of Clinical Diagnostic Interviews  
**Manas Gaur**, Vamsi Aribandi, Ugur Kursuncu, Amanuel Alambo, Valerie L. Shalin, Krishnaprasad Thirunarayan, Jonathan Beich, Meera Narasimhan, Amit Sheth  
JMIR: Journal of Medical Informatics Research.
- Pone 2021a** Characterization of Time-variant and Time-invariant Assessment of Suicidality on Reddit using C-SSRS  
**Manas Gaur**, Vamsi Aribandi, Amanuel Alambo, Ugur Kursuncu, Krishnaprasad Thirunarayan, Jonathan Beich, Jyotishman Pathak, Amit Sheth  
PloS One
- JPH 2021** DAO: An Ontology for Substance Use Epidemiology on Social Media and Dark Web  
Usha Lokala, Raminta Daniulaityte, Francois Lamy, **Manas Gaur**, Krishnaprasad Thirunarayan, Ugur Kursuncu, Amit Sheth  
JMIR Public Health and Surveillance [\[Preprint\]](#)
- IJID 2021** Impact of reproduction number on multiwave spreading dynamics of COVID-19 with temporary immunity: a mathematical model  
B Shayak, Mohit Sharma, **Manas Gaur**, Anand Kumar Mishra  
International Journal of Infectious Diseases, 2021
- SN 2019** Predictive analysis on Twitter: Techniques and applications  
Ugur Kursuncu, **Manas Gaur**, Usha Lokala, Krishnaprasad Thirunarayan, Amit Sheth, I. Budak Arpinar  
Springer Nature: Emerging research challenges and opportunities in computational social network analysis and mining, 2019
- TF 2019** Framework for SLEPS : Self learning electoral results prediction system  
**Manas Gaur**, Ashish Joshi, Sarita Yadav

- Taylor & Francis: Journal of Statistics and Management Systems, 2019
- TF 2017** Feature engineering for twitter-based applications.  
Sanjaya Wijeratne, Amit Sheth, Shreyansh Bhatt, Lakshika Balasuriya, Hussein S. Al-Olimat, **Manas Gaur**, Amir Hossein Yazdavar, Krishnaprasad Thirunarayan  
Taylor & Francis: Feature engineering for machine learning and data analytics, 2017
- PJ 2017** Fish ontology framework for taxonomy-based fish recognition  
Najib M Ali, Haris A Khan, Y Amy, Hui Then, Chong Ving Ching, **Manas Gaur**, Sarinder Kaur Dhillon  
PeerJ: Life & Environment, 2017
- SN 2016** Genetically modified logistic regression with radial basis function for robust software effort prediction  
**Manas Gaur**  
Springer: Machine Intelligence and Signal Processing, 2016
- EV 2015** Nature inspired algorithms in remote sensing image classification  
**Manas Gaur**, Shruti Goel, and Eshaan Jain  
Elsevier: Applied Soft Computing, 2015

#### Articles in periodicals

- IC 2021** Knowledge-intensive Language Understanding for Explainable AI  
Amit Sheth, **Manas Gaur**, Keyur Faldu, Kaushik Roy  
IEEE Internet Computing, 2021
- IC 2020** Semantics of the Black-Box: Can knowledge graphs help make deep learning systems more interpretable and explainable?  
**Manas Gaur**, Keyur Faldu, Amit Sheth  
IEEE Internet Computing, 2020
- IC 2019** Shades of knowledge-infused learning for enhancing deep learning  
Amit Sheth, **Manas Gaur**, Ugur Kursuncu, Ruwan Wickramarachchi  
IEEE: Internet Computing, 2019

#### Articles in peer-reviewed conference proceedings

- AAAI 2022** ISEEQ: Information Seeking Question Generation using Dynamic Meta-Information Retrieval and Knowledge Graphs  
**Manas Gaur**, Kalpa Gunaratna, Vijay Srinivasan, Hongxia Jin, *Accepted in 36<sup>th</sup> AAAI*.
- ICHI 2021** “Who can help me?” Knowledge Infused Matching of Support Seekers and Support Providers during COVID-19 on Reddit  
**Manas Gaur**, Kaushik Roy, Aditya Sharma, Biplav Srivastava, Amit Sheth  
9<sup>th</sup> IEEE International Conference on Healthcare Informatics
- ECML 2021** Knowledge Infused Policy Gradients with UCB for Relational Bandits  
Kaushik Roy, Qi Zhang, **Manas Gaur**, Amit Sheth  
32<sup>nd</sup> European Conference on Machine Learning.
- AMIA 2021** Comparing suicide risk insights derived from clinical and social media data  
Rohith Thiruvalluru\*, **Manas Gaur\***, Krishnaprasad Thirunarayan, Amit Sheth, Jyotishman Pathak  
AMIA Informatics Conference 2021 (\**Equal Contribution*)
- SocInfo 2020** ALONE: A dataset for toxic behavior among adolescents on twitter  
Thilini Wijesiriwardene, Hale Inan, Ugur Kursuncu, **Manas Gaur**, Valerie L Shalin, Krishnaprasad Thirunarayan, Amit Sheth, I Budak Arpinar  
Social Informatics, 2020
- KDD 2020** Exo-SIR: An epidemiological model to analyze the impact of exogenous infection of COVID-19 in India

Nirmal Kumar Sivaraman, **Manas Gaur**, Shivansh Bajjal, Ch V Rupesh, Sakthi Balan Muthiah, Amit Sheth  
ACM SIGKDD : Health Day on AI for COVID, 2020

**AAAIa 2020** Unsupervised detection of sub-events in large scale disasters

**Manas Gaur**, Chidubem Arachie, Sam Anzaroot, William Groves, Ke Zhang, Alejandro Jaimes  
AISI: AAAI Conference on AI for Social Impact, 2020

**WWW 2019** Knowledge-aware assessment of severity of suicide risk for early intervention

**Manas Gaur**, Amanuel Alambo, Joy Prakash Sain, Ugur Kursuncu, Krishnaprasad Thirunarayan, Ramakanth Kavuluru, Amit Sheth, Randy Welton, Jyotishman Pathak  
ACM WWW: The World Wide Web Conference, 2019

**CSCW 2019** Modeling islamist extremist communications on social media using contextual dimensions: Religion, Ideology, and Hate

Ugur Kursuncu, **Manas Gaur**, Carlos Castillo, Amanuel Alambo, Krishnaprasad Thirunarayan, Valerie Shalin, Dilshod Achilov, I Budak Arpinar, Amit Sheth  
ACM CSCW: ACM Conference on Computer Supported Cooperative Work, 2019

**ICSC 2019a** Question answering for suicide risk assessment using reddit

Amanuel Alambo, **Manas Gaur**, Usha Lokala, Ugur Kursuncu, Krishnaprasad Thirunarayan, Amelie Gyrard, Amit Sheth, Randon S Welton, Jyotishman Pathak  
IEEE: International Conference on Semantic Computing, 2019

**ICSC 2019b** empathi: An ontology for emergency managing and planning about hazard crisis

**Manas Gaur**, Saeedeh Shekarpour, Amelie Gyrard, Amit Sheth  
IEEE: International Conference on Semantic Computing, 2019

**WI 2018a** Enhancing crowd wisdom using explainable diversity inferred from social media

Shreyansh Bhatt, **Manas Gaur**, Beth Bullemer, Valerie Shalin, Amit Sheth, Brandon Minnery  
IEEE: International Conference on Web Intelligence (WI), 2018

**WI 2018b** What's ur Type? Contextualized classification of user types in marijuana-related communications using compositional multiview embedding

Ugur Kursuncu, **Manas Gaur**, Usha Lokala, Anurag Illendula, Krishnaprasad Thirunarayan, Raminta Daniulaityte, Amit Sheth, I Budak Arpinar  
IEEE: International Conference on Web Intelligence (WI), 2018

**CIKM 2018** " Let Me Tell You About Your Mental Health!" Contextualized classification of reddit posts to DSM-5 for web-based intervention

**Manas Gaur**, Ugur Kursuncu, Amanuel Alambo, Amit Sheth, Raminta Daniulaityte, Krishnaprasad Thirunarayan, Jyotishman Pathak  
ACM CIKM: Conference on Information and Knowledge Management, 2018

**DSAA 2018** A hybrid recommender system for patient-doctor matchmaking in primary care

Qiwei Han, Mengxin Ji, Inigo Martinez de Rituerto de Troya, **Manas Gaur**, Leid Zejnilovic  
IEEE: International Conference on Data Science and Advanced Analytics, 2018

**ISWC 2018** Personalized Health Knowledge Graph

Amelie Gyrard, **Manas Gaur**, Saeedeh Shekarpour, Krishnaprasad Thirunarayan, Amit Sheth  
ISWC: International Conference on Semantic Web, 2018

#### **Articles in peer-reviewed workshop/symposium proceedings**

**AAAIb 2021** Knowledge Infused Policy Gradients for Adaptive Pandemic Control

Kaushik Roy, Qi Zhang, Manas Gaur, Amit Sheth  
AAAI MAKE: AAAI Spring Symposium on Combining Machine Learning and Knowledge Engineering, 2021

**AAAIc 2020** COVID-19 in Spain and India: Comparing Policy Implications by Analyzing Epidemiological and Social Media Data

Parth Asawa, **Manas Gaur**, Kaushik Roy, Amit Sheth  
AAAI AI for Social Good Fall Symposium, 2020

**KiML 2020** Depressive, Drug Abusive, or Informative: Knowledge-aware Study of News Exposure during COVID-19 Outbreak

Amanuel Alambo, **Manas Gaur**, Krishnaprasad Thirunarayan  
KiML: ACM SIGKDD Workshop on Knowledge-infused Mining and Learning, 2020

**AAAIId 2020** Knowledge infused learning: Towards deep incorporation of knowledge in deep learning

Ugur Kursuncu, **Manas Gaur**, Amit Sheth  
AAAI MAKE 2020

#### Under review

**ACL 2021\*** ProKnow: Dataset and Method for Process-guided, Safety-Constrained, and Explainable Mental Health Diagnostic Assistance

**Manas Gaur**, Kaushik Roy, Qi Zhang, Ashwin Kalyan, Amit Sheth, *Under Review in ACL*.

**AJPH 2022\*** Knowledge-guided association between psychological impact and social distancing during COVID-19: A Twitter-based study

**Manas Gaur**, Rohith Thiruvalluru, Mohit Sharma, Amit Sheth, Rachel Presskreischer, Jyotishman Pathak, *Under Review in American Journal of Public Health*

**FAI 2022\*** Towards Tractable Mathematical Reasoning: Challenges, Strategies, and Opportunities for Solving Math Word Problems

Keyur Faldu, Amit Sheth, Prashant Kikani, **Manas Gaur**, Aditi Avasthi, *Under review in Frontiers in Artificial Intelligence*

#### Organized Tutorials, Workshops, & Hackathon

**TUT 2021b** *Knowledge In - Wisdom Out*: Explainable Data for AI in Cyber Social Threats and Public Health

**Manas Gaur**, Kaushik Roy, Usha Lokala, Amit Sheth  
AAAI ICWSM 2021 ([Tutorial Website](#))

**CASY 2020, 2021** Collaborative Assistants for Society

Biplav Srivastava, **Manas Gaur**, Utkarshani Jamini, Vishal Pallagani, Tanisha Elder ([Conference Website](#))

**TUT 2021a** Explainable AI using Knowledge

**Manas Gaur**, Keyur Faldu, Ankit Desai, Amit Sheth  
ACM CoDS-COMAD: ACM India Joint International Conference on Data Science and Management of Data 2021  
([Tutorial Website](#))

**TUT 2020** Knowledge-infused Deep Learning

**Manas Gaur**, Ugur Kursuncu, Amit Sheth, Ruwan Wikramarachchi, Shweta Yadav  
ACM HT: ACM Conference on Hypertext and Social Media, 2020  
([Tutorial Website](#))

**WS 2020** Knowledge-infused Mining and Learning

Organizing Committee: **Manas Gaur**, Alejandro Jaimes, Fatma Ozcan, Srinivasan Parthasarathy, Sameena Shah, Amit Sheth, Biplav Srivastava  
ACM SIGKDD: Conference on Knowledge Discovery and Data Mining, 2020  
([Workshop Website](#)) ([Workshop Proceedings](#))

**HK 2020** Psychidemic: Estimation of Mental Health Patterns in COVID19 Tweets and Emojis

Knowledge Graph and Semantic Web Conference, 2020  
([Hackathon Webpage](#))

HK 2018 Knowledge Extraction for the Web of Things (KE4WoT)  
The World Wide Web Conference, 2018  
([Hackathon Webpage](#))

## Advising & Mentoring

Renjith Prasad, MS Student, IIT Jammu, 2021  
Oumaima Boumlik, MS Student, IMT Lille Douai, 2021  
Anim-Addo Emmanuel (part of [SC-ADAR program](#)), Undergrad, Clafin University, 2020  
Parth Asawa, Monta Vista High School, Cupertino, 2020-2021  
Mohit Sharma, Research Coordinator, Weill Cornell Medicine, 2020-present  
Nirmal Kumar Sivaraman, Ph.D. Student, LNM-IIT, India, 2020-present  
Kaushik Roy, Ph.D. Student, University of South Carolina, 2020-present  
Vishal Pallagani, Ph.D. Student, University of South Carolina, 2020-2021  
Aditya Sharma, Undergrad, LNM-IIT, India, 2020-2021  
Tarun Garg, Undergrad, BITS Hyderabad, 2020  
Kush Jain, Undergrad, BITS Goa, 2020  
Swapnil Tripathi, Undergrad, IIT Kanpur, 2020-2021  
Vamsi Aribandi, Undergrad and Google AI Fellow, BITS Hyderabad, 2019  
Rohith Thiruvalluru, Data Analyst, Weill Cornell Medicine, 2019-2021  
Kunal Dhavale, MS Student, University of South Carolina, 2019-2020  
Vedant Khandelwal, Ph.D. Student, University of South Carolina, 2019-2021  
Amanuel Alambo, Ph.D. Student, Wright State University, 2017-2020  
Ankita Saxena, MS Student, Wright State University, 2017  
Swati Padhee, MS Student, Wright State University, 2017-2018

## Contribution to Grants & Proposals

EPSRC: Time-sensitive sensing of language and user-generated content, Agency: UKRI, Amount: \$29K (*lead contributor*, Collaboration: UMD College Park and Alan Turing Institute UK.)  
EAGER: Advancing Neuro-symbolic AI with Deep Knowledge-infused Learning, Agency: NSF, Amount: \$140K. (*lead contributor*)  
MURI: Developing A Computational Approach for Understanding Information Exchange Network Dynamics, Agency: ARO, Amount: \$6.25M.  
Enhancing Mental Health Assistance during and after COVID-19 Pandemic, Agency: UofSC, Amount: \$25K. (*lead contributor*)  
Development of an Instrumented, Intelligent Infant Interaction Laboratory for the Prediction of Autism Spectrum Disorder, Agency: UofSC, Amount: \$39K  
AI-assisted interactive student learning with novel process analogy instruction, Agency: NSF, Amount: \$300K (Phase 1).  
A Knowledge-Enhanced Approach to Contextual and Personalized Virtual Health Assistant, Agency: NSF, Amount: \$1M. (*lead contributor*)  
Open Knowledge Network for Addiction and Mental Health, Agency: NSF, Amount: \$1M.

## Teaching Experience

Guest Lecture, Knowledge-infused Learning, Center for Machine Learning and Big Data Analytics, LNM-IIT India, 2020  
Guest Lecture, Data Science for Social Good, Sabudh Foundation, India, 2020  
Data Science Mentor, Mentor Cruise, Switzerland, 2018-present  
Co-Instructor, Advanced Semantic Web, Spring 2017 and 2018 (Instructor: Dr. Amit P. Sheth)  
Teaching Assistant, Artificial Intelligence, Fall 2017  
Teaching Assistant, Operating Systems, State University of New York, Spring 2016  
Teaching Assistant, Programming Languages, State University of New York, Fall 2015  
Teaching Assistant, Software Engineering, Delhi Technological University, August-December 2013  
Teaching Assistant, Java Programming, Delhi Technological University, January-May 2014

**Invited Talks & Panel Discussions**

Invited Lecture on “KG and AI in Businesses”, Tallinn University of Technology, Estonia, 2021.  
 Workshop on Personalized Health Knowledge Graph, Automatic Knowledge Base Construction Conference, 2021  
**Keynote** at Winter School in Knowledge Graphs and Semantic Web Conference, 2020  
 Big Data Health Science Conference, University of South Carolina, USA, 2020  
 PyData Conference (Virtual), Berlin & Salamanca, 2020  
 Indraprastha Institute of Information Technology, India, 2020  
 Center for Research on Computation and Society, Harvard University, 2020  
 Natural Language Processing Seminar, University of Dayton, USA, 2019  
 Ontology Summit, 2019  
 Machine Learning Lecture Series, University of Texas, USA, 2019

**Community Service**

**Chair/Organizer:**  
*Session Chair*, Web of Data, International Conference on Web Intelligence and Intelligent Agent Technology (WI-IAT), 2021  
*Application Track Chair*, International Semantic Intelligence Conference (ISIC), 2021  
*Organizer*, Workshop on Knowledge-infused Learning at Knowledge Graph Conference, 2021  
*Organizer*, Workshop on Knowledge-infused Mining and Learning at ACM KDD, 2020  
*Organizer*, Hackathon on Measuring Psychological Impact of COVID19 at KGSWC, 2020  
*Organizer*, Hackathon on IoT, Knowledge Graphs, and Machine Learning at WWW, 2018

**Program Committee:**  
 NAACL Workshop on Computational Linguistics and Clinical Psychology, 2022  
 EMNLP - Empirical Methods in Natural Language Processing, 2021  
 AAAI Conference on Artificial Intelligence, 2020-2021  
 AAAI Workshops on Artificial Intelligence, 2020-2021  
 CIKM - ACM International Conference on Information and Knowledge Management (Research Track), 2019-2020  
 WWW - International World Wide Web Conference (Research and Demo Track), 2017-2020  
 FUZZ-IEEE - IEEE International Conference on Fuzzy Systems, 2020  
 ISWC - International Semantic Web Conference, 2017-2020  
 ICSC Workshop on Semantic Machine Learning, 2020  
 CySOC - ICWSM Workshop on Cyber Social Threats, 2020  
 Web Science - ACM International Conference on Web Science, 2020  
 AAAI ICWSM - International Conference on Weblogs and Social Media, 2019-2020  
 EKAW - International Conference on Knowledge Engineering and Knowledge Management, 2016, 2018, & 2020  
 BigData - IEEE International Conference on Big Data, 2017-2019  
 SIGAPP - ACM/SIGAPP Symposium on Applied Computing, 2017

**Journal Reviewer:**  
 CSUR - ACM Computing Surveys, 2021  
 TOIT - ACM Transactions on Internet Technology, 2020  
 IC - IEEE Internet Computing, 2019-2020  
 TIST - ACM Transactions on Intelligent Systems and Technology, 2020  
 SNAM - Springer Journal on Social Network Analysis and Mining, 2020  
 Malaysian Journal of Science, 2020  
 Fuzzy Systems - IEEE Transactions on Fuzzy Systems, 2019  
 IPM - Elsevier Journal on Information Processing and Management, 2017-2018

**Other:**  
 President, Indian Student Organization, 2020-2021  
 Moderator, Collaborative Assistant for the Society, AI Institute hosted Conference, University of

South Carolina, 2020  
Member of Internet Society, 2014-present  
Member of International Association of Engineers, 2014-present  
Student Member of the Institute for Computer Science, Social Informatics, and Telecommunications Engineering, 2014  
Student Organizing Committee, Institute of Engineers UK-India Chapter, 2011-2013

SELECTED MEDIA  
COVERAGE

Healthline: [What Your Social Media Posts Say About Your Stress Level Right Now](#)  
The Conversation: [Measuring online conversations to track mental health issues during COVID19](#)  
Venture Beat: [Patient and Primary Care Doctors Matchmaking](#)  
[Lightening Talk](#) at Computing Research Association (CRA) Virtual Conference 2020: Psychidemic: Monitoring Health & Social Impact of Policy Decisions during COVID-19 Pandemic