

Manas Gaur

Contact Information

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Artificial Intelligence Institute
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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

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

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 36th 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
9th 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
32nd 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:
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