

SUMMARY OF QUALIFICATIONS	Dr. Ugur Kursuncu is a highly self-motivated scientist with demonstrated research expertise in the growing area of Artificial Institute (AI) for Social Good, at AI Institute, University of South Carolina. He has performed multidisciplinary (and often multi-institutional) research on novel Artificial Intelligence (AI) algorithms for Big Data including biomedical, sensor and social data, with extensive applications in healthcare and social domains. His technical AI research is particularly inspired by real-world problems to assure that novel techniques are both meaningful and intuitive in the context of the target domain. He coordinated extensive collaborations with healthcare and social sciences researchers, practicing clinicians in the last four years, resulting in a series of publications at the top-tier international computer science, computational social science, and healthcare venues. These publications particularly focus on predictive analysis of social, clinical, biomedical and social media datasets, with technical contributions to Machine/Deep Learning (ML/DL), Semantic Web (Ontology/Knowledge Graphs), and Natural Language Processing (NLP). He often made major contributions to the design and writing efforts of research grant proposals for public (NSF, NIH, DoD-ARO, AFRL, DoJ, UofSC) and private (Google AI) funding agencies. His research on Autism has been recently funded for pilot study. He has organized international workshops (AAAI-ICWSM 2020), guest edited special issues (IEEE Internet Computing) and served in the program committees of international conferences including The Web Conference ('19,'20,'21), ICWSM'21 and CSCW'21.		
EDUCATION	<b>The University of Georgia</b>	Athens, GA	
	Ph.D. in Computer Science		December 2018
	Dissertation: <i>Modeling the Persona in Persuasive Discourse on Social Media Using Context-aware and Knowledge-driven Learning</i>		
	Committee: I. Budak Arpinar (Advisor), John A. Miller, Krys J. Kochut, Dilshod Achilov		
	<b>Stevens Institute of Technology</b>	Hoboken, NJ	
	M.S. in Computer Engineering		December 2011
	<b>Ankara University</b>	Ankara, Turkey	
	B.S. in Electronics Engineering		July 2006
RESEARCH AREAS	AI for Social Good, Human-centered Social Computing, Knowledge-infused Machine/Deep Learning, Natural Language Understanding/Processing, Human-Computer Interaction, Semantic Web & Knowledge Graphs, Conversational AI, Social Network Analysis, Crowdsourcing, Data Science for Social Good.		
PUBLICATIONS	· (* indicates mentee) · (When available, the acceptance rate is included) ·		
	21. S. Simsek, <b>U. Kursuncu</b> , E. Kibis, M. AnisAbdellatif, and A. Dag, “A hybrid data mining approach for identifying the temporal effects of variables associated with breast cancer survival,” <i>Expert Systems with Applications</i> , vol. 139, p. 112 863, 2020, Full Paper.		
	20. <b>U. Kursuncu</b> , H. Purohit, N. Agarwal, and A. Sheth, “When the Bad is Good and the Good is Bad: Understanding Cyber Social Health through Online Behavioral Change,” <i>IEEE Internet Computing</i> , 2020, Full Paper.		
	19. T. Wijesiriwardene*, H. Inan*, <b>U. Kursuncu</b> , M. Gaur, V. L. Shalin, K. Thirunarayan, A. Sheth, and I. B. Arpinar, “ALONE: A Dataset for Toxic Behavior among Adolescents on Twitter,” in <i>Proceedings of International Conference on Social Informatics (SocInfo)</i> , Springer Nature, 2020, pp. 427–439, Full Paper.		

18. M. Gaur, **U. Kursuncu**, A. Sheth, R. Wickramarachchi, and S. Yadav, "Knowledge-infused Deep Learning," in *Proceedings of the 31st ACM Conference on Hypertext and Social Media*, 2020, pp. 309–310, Tutorial Paper.
17. **U. Kursuncu**, M. Gaur, and A. Sheth, "Knowledge infused Learning (K-IL): Towards Deep Incorporation of Knowledge in Deep Learning," in *Proceedings of the AAAI 2020 Spring Symposium on Combining Machine Learning and Knowledge Engineering in Practice (AAAI-MAKE)*, 2020, Full Paper.
16. **U. Kursuncu**, Y. Mejova, J. Blackburn, and A. Sheth, "Cyber Social Threats 2020 Workshop Meta-report: COVID-19, Challenges, Methodological and Ethical Considerations," in *Workshop Proceedings of the 14th International AAAI Conference on Web and Social Media (ICWSM)*, 2020, Workshop Paper.
15. F. Lamy, R. Daniulaityte, U. Lokala, **U. Kursuncu**, A. Sheth, R. Nahaas, M. Barratt, R. Carlson, and A. Sheth, "eDarkTrends: Analyzing Illicit Fentanyl and Other Novel Synthetic Opioid Trends on Cryptomarkets," *CPDD 81st Annual Scientific Meeting. The College on Problems of Drug Dependence*, 2019, Extended Abstract and Oral Presentation.
14. **U. Kursuncu**, M. Gaur\*, U. Lokala, K. Thirunarayan, A. Sheth, and I. B. Arpinar, "Predictive analysis on Twitter: Techniques and applications," in *Emerging Research Challenges and Opportunities in Computational Social Network Analysis and Mining*, Springer Cham., 2019, pp. 67–104, Book Chapter.
13. A. Sheth, M. Gaur, **U. Kursuncu**, and R. Wickramarachchi, "Shades of knowledge-infused learning for enhancing deep learning," *IEEE Internet Computing*, vol. 23, no. 6, pp. 54–63, 2019, Full Paper.
12. A. Alambo, M. Gaur\*, U. Lokala, **U. Kursuncu**, K. Thirunarayan, A. Gyrard, A. Sheth, R. S. Welton, and J. Pathak, "Question answering for suicide risk assessment using Reddit," in *Proceedings of 13th International Conference on Semantic Computing (ICSC)*, IEEE, 2019, pp. 468–473, Full Paper.
11. **U. Kursuncu**, M. Gaur, C. Castillo, A. Alambo, K. Thirunarayan, V. Shalin, D. Achilov, I. B. Arpinar, and A. Sheth, "Modeling Islamist extremist communications on social media using contextual dimensions: Religion, Ideology, and Hate," *Proceedings of the ACM on Human-Computer Interaction*, vol. 3, no. CSCW, pp. 1–22, 2019, [Acceptance Rate 26%], Full Paper.
10. M. Gaur\*, A. Alambo, J. P. Sain, **U. Kursuncu**, K. Thirunarayan, R. Kavuluru, A. Sheth, R. Welton, and J. Pathak, "Knowledge-aware assessment of severity of suicide risk for early intervention," in *Proceedings of The Web Conference*, ACM, 2019, [Acceptance Rate 18%], pp. 514–525, Full Paper.
9. **U. Kursuncu**, "Modeling the Persona in Persuasive Discourse on Social Media Using Context-aware and Knowledge-driven Learning," Ph.D. dissertation, University of Georgia, 2018, Ph.D. Dissertation.
8. A. Alambo, M. Gaur\*, **U. Kursuncu**, K. Thirunarayan, J. Schumm, J. Pathak, and A. P. Sheth, "Personalized Prediction of Suicide Risk for Web-based Intervention," in *24<sup>th</sup> Mental Health Services Research Conference*, NIMH, 2018, Poster.
7. **U. Kursuncu**, M. Gaur, U. Lokala, A. Illendula, K. Thirunarayan, R. Daniulaityte, A. Sheth, and I. B. Arpinar, "What's ur Type? Contextualized Classification of User Types in Marijuana-Related Communications Using Compositional Multiview Embedding," in *Proceedings of International Conference on Web Intelligence (WI)*, ACM, IEEE, 2018, [Acceptance Rate 28%], pp. 474–479, Full Paper.

6. M. Gaur\*, **U. Kursuncu**, A. Alambo, A. Sheth, R. Daniulaityte, K. Thirunarayan, and J. Pathak, "'Let Me Tell You About Your Mental Health!' Contextualized Classification of Reddit Posts to DSM-5 for Web-based Intervention," in *Proceedings of the 27<sup>th</sup> ACM International Conference on Information and Knowledge Management (CIKM)*, ACM, 2018, [Acceptance Rate 17%], pp. 753–762, Full Paper.
5. N. Bhattacharya\*, I. B. Arpinar, and **U. Kursuncu**, "Real time evaluation of quality of search terms during query expansion for streaming text data using velocity and relevance," in *Proceedings of 11<sup>th</sup> International Conference on Semantic Computing (ICSC)*, IEEE, 2017, pp. 280–281, Poster Paper.
4. I. B. Arpinar, **U. Kursuncu**, and D. Achilov, "Social media analytics to identify and counter Islamist extremism: Systematic detection, evaluation, and challenging of extremist narratives online," in *Proceedings of International Conference on Collaboration Technologies and Systems (CTS)*, IEEE, 2016, pp. 611–612, Extended Abstract and Keynote.
3. A. Basharat, I. B. Arpinar, S. Dastgheib, **U. Kursuncu**, K. Kochut, and E. Dogdu, "Semantically enriched task and workflow automation in crowdsourcing for linked data management," *International Journal of Semantic Computing*, vol. 8, no. 04, pp. 415–439, 2014, Full Paper.
2. I. B. Arpinar, A. Rahman, P. Wadhwa, L. Ramaswamy, and **U. Kursuncu**, "Semantics-enabled Proactive and Targeted Dissemination of New Medical Knowledge," in *Proceedings of International Conference on Bioinformatics and Computational Biology (BICoB)*, 2014, Full Paper.
1. A. Basharat, I. B. Arpinar, S. Dastgheib, **U. Kursuncu**, K. Kochut, and E. Dogdu, "CrowdLink: Crowdsourcing for large-scale linked data management," in *Proceedings of International Conference on Semantic Computing (ICSC)*, IEEE, 2014, pp. 227–234, Full Paper.

#### **In Review**

7. M. Gaur, V. Aribandi, **U. Kursuncu**, A. Alambo, K. Thirunarayan, J. Beich, and A. Sheth, "Time-Variant or Time-Invariant? Comparing Methodologies for Suicide-Risk Assessment of Redditors," 2020, Full Paper.
6. M. Gaur, A. Sharma, **U. Kursuncu**, K. Roy, A. Sheth, and S. Dash, "Bringing Close Support Seekers and Support Providers in Online COVID-19 Mental Health Communities," 2020, Full Paper.
5. M. Gaur\*, V. Aribandi, **U. Kursuncu**, A. Alambo, K. Thirunarayan, J. Beich, M. Narasimhan, and A. Sheth, "Knowledge-infused Abstractive Summarization of Clinical Diagnostic Interviews," 2020, Full Paper.
4. **U. Kursuncu**, A. Alambo, V. Aribandi, M. Gaur, R. Daniulaityte, A. Sheth, and K. Thirunarayan, "Opioid Crisis in Ohio on Social Media: Trend Analysis and its Implications," 2020, Full Paper.
3. **U. Kursuncu**, V. Khandelwal\*, A. F. Budak\*, M. Gaur, K. Thirunarayan, V. Shalin, M. Narasimhan, and A. Sheth, "Examining Machine Generated Supportive Text for Patients with Suicide Risk," 2020, Full Paper.
2. U. Lokala, R. Daniulaityte, F. Lamy, A. Gyrard, M. Gaur, **U. Kursuncu**, and A. Sheth, "Drug Abuse Ontology: An Ontology for Substance Use Epidemiology on Social Media and Dark Web," 2020, Full Paper.
1. H. Safadi, W. Li, P. Rahmati, S. Soleymani\*, **U. Kursuncu**, K. Kochut, and A. Sheth, "Curtailling Fake News Propagation with Psychographics," 2020, Full Paper.

#### **In Preparation**

3. **U. Kursuncu**, G. Gupta\*, K. Roy, M. Gaur, V. Shalin, K. Thirunarayan, and A. Sheth, "Knowledge-infused Multimodal Learning for Detection of Toxic Behavior on Twitter," 2020, Full Paper.

2. **U. Kursuncu**, V. Khandelwal\*, S. Acar, J. Berger, D. Achilov, M. Gaur, V. Shalin, K. Thirunarayan, and A. Sheth, "Measuring Malevolent Creativity in the Extremist Networks on Social Media: The Case of ISIS," 2020, *Full Paper*.
1. **U. Kursuncu**, V. Khandelwal\*, M. Gaur, V. Shalin, and A. Sheth, "Psychidemic: Measuring the Spatio-Temporal Psychological Impact of COVID-19 with a Social Quality Index," 2020, *Full Paper*.

## GRANTS

### Funded, Pending, In Preparation:

- "Development of an Instrumented, Intelligent Infant Interaction Laboratory for the Prediction of Autism Spectrum Disorder" Agency: UofSC. Amount: \$40K. Duration: 1 year. Role: Co-I. **Funded**
- "Intelligent Integration and Bioinformatics for Early Onset of Colorectal Cancer" Agency: NCI/NIH. Amount: \$3M. Duration: 5 years. Role: Lead writer. **Pending**
- "Identifying the Creativity Gap: A Comparison of the Actualized and Potential Creativity" Agency: Russel Sage Foundation. Amount: \$175K. Duration: 2 years. Role: Co-PI. **Pending**
- "Detecting Disinformation on Social Media using Knowledge-infused Learning" Agency: NSF. Amount: \$1M. Role: Co-I & Lead writer. **In Preparation**

### Unfunded:

- "MURI: Developing A Computational Approach for Understanding Information Exchange Network Dynamics." Agency: ARO. Role: Coordinator & Lead writer. Amount: \$6.5M.
- "Enhancing Mental Health Assistance during and after COVID-19 pandemic." Agency: UofSC. Role: Contributor. Amount: \$25K.
- "A Knowledge-Enhanced Approach to Contextual and Personalized Virtual Health Assistant" Agency: NSF. Role: Contributor. Amount: \$1M.
- "Detecting Online Radicalization through Contextual Knowledge using Social Computing" Agency: DoJ/NIJ. Role: Lead writer. Amount: \$1M.
- "Detection of Radicalization on Social Media using Context-Aware Learning" Agency: NSF. Role: Lead writer. Amount: \$1.2M.
- "Knowledge-infused Learning to Model Radicalization on Social Media" Agency: Google AI. Role: Lead writer. Amount: \$500K.
- "Analytical Cognitive Enhancement Research" Agency: AFRL. Role: Lead writer. Amount: \$800K.

Also, made major contributions to the writing of more than ten proposals (unfunded) in the areas of disaster management, STEM education, and public health.

## EDITORIAL, WORKSHOPS & TUTORIALS ORGANIZED

### Guest Editor:

Special Issue (IEEE Internet Computing) on Cyber-Social Health: Promoting Good and Countering Harm on Social Media. *IEEE Internet Computing*. **Editors:** **Ugur Kursuncu**, Nitin Agarwal, Hemant Purohit, Amit P. Sheth. ([Link](#)).

### Workshops Organized:

International Workshop on Cyber Social Threats ([CySoc 2020](#)), co-located with the 14th International AAAI Conference on Web and Social Media (ICWSM). **Organizers:** **Ugur Kursuncu**, Yelena Mejova, Jeremy Blackburn, Amit P. Sheth. **Summary:** Cyber Social Threats 2020 Workshop Meta-report: COVID-19, Challenges, Methodological and Ethical Considerations ([Link](#)).

### Tutorials:

Knowledge-infused Deep Learning. 31<sup>st</sup> *ACM Conference on Hypertext and Social Media*. **Organizers:** Manas Gaur, **Ugur Kursuncu**, Ruwan Wickramarachchi, Shweta Yadav, Amit P. Sheth. ([Link](#)).

## INVITED TALKS

1. "Insights from Analysis of Social Media Big Data Measuring the Psychological Impact of COVID-19" *Computing Research Association Conference 2020*. July 2020. ([Video Link](#)) (with Vedant Khandelwal, Manas Gaur, Valerie Shalin, Amit Sheth)
2. "Understanding factors driving Extremism on Social Media." *South Big Data Hub*. April 2020. ([Video link](#)) (with Amit Sheth)
3. "Knowledge-infused AI for Healthcare: Role of Conceptual Medical Knowledge in Improving Machine Understanding." *National Big Data Health Sciences Conference* (NIH Grantee Session). February 2020.
4. "Understanding the Harms of Online Platforms: Radicalization and Gun Violence." *Data+Creativity Lecture Series*, Oklahoma City, Oklahoma. October 2019.
5. "Explainability of Medical AI through Domain Knowledge". *Ontology Summit 2019*, March 2019. (with Manas Gaur)
6. "Analysis of Islamist Extremist Narrative on Social Media" *MED 18: Middle East Dialogue: A New Collective Vision*. Policy Studies Organization, Washington DC. March, 2018. ([Video link](#))
7. "Social Media Analytics to Identify and Counter Islamist Extremism: Systematic Detection, Evaluation, and Challenging of Extremist Narratives Online". *International Conference on Collaboration Technologies and Systems (CTS 2016)*, Orlando, Florida. November, 2016.

## RESEARCH EXPERIENCE

**AI Institute,<sup>1</sup> University of South Carolina**  
**Postdoctoral Fellow**  
**Visiting Researcher**

Columbia, SC  
 Nov 2018 – Present  
 May 2017 – Oct 2018

Advisor: Prof. Amit Sheth

- **Knowledge Infused Learning.** Building responsible intelligent systems by integrating knowledge into contemporary artificial intelligence and data science methods for improvements in performance, interpretability, proactive user engagement and ultimately, trust.
- **Cyber Social Threats.** Modeling social media communications with harmful content (e.g., extremism, harassment, misinformation) using contextual dimensions. Understanding of persuasive processes in the face of these problems: how persuasion takes place over time upon the exposure of such harmful content.
- **Health Informatics.** Developing novel approaches in prediction of mental health disorders and severity level of suicide risk, question answering for suicide risk assessment and intervention, prediction of Autism Spectrum Disorder, detection of cancer and survival prediction, and spatio-temporal trend analysis of drug use/abuse.

**LSDIS Lab, University of Georgia**  
**Research Assistant**

Athens, GA  
 Jan 2013 – Dec 2017

Advisor: Prof. I. Budak Arpinar

- **Knowledge Graphs & Semantic Web.** Creation and verification of triples in Linked Open Data (LOD), using crowdsourcing. A survey study on the automatic creation of Knowledge Graphs.
- **Cyber Social Threats.** Analysis of Islamist extremist/radical narrative on social media in political, social and religious context. Analysis of a social and political conflict in Turkey on Twitter using sentiment and social network Analysis.
- **Health Informatics.** Prediction of survival of breast cancer patients. Development of an approach to semantically discover and retrieve relevant medical information from electronic health records.

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<sup>1</sup> Formerly Kno.e.sis Center at Wright State University

## TEACHING EXPERIENCE

**Department of Computer Science, University of Georgia**  
**Instructor of Record**  
**Teaching Assistant**

Athens, GA  
*Spring 2014 – Fall 2017*  
*Spring 2013 – Fall 2016*

Taught, *independently*, the following courses:

- CSCI 2720 “Data Structures” Course in Spring 2014 and Spring 2017 semesters. Undergraduate. (**two times.**) ~ 50 students each.
- GRSC 7770 “Graduate Teaching Seminar Course” in the Fall 2017 semester. This was a “graduate-only” course that was required in order to become a teaching assistant in the department. Graduate. ~ 15 students.

Taught or assisted the instructor for the following courses:

- Taught CSCI 1301L “Introduction to Programming with Java - Lab” Fall 2013, 2015, Spring 2015, 2016. Undergraduate. (**four times.**) ~ 75 students each.
- Assisted the instructors of the following courses:
  - CSCI X370 “Database Management Systems” Fall 2014, Spring 2013, Summer 2014, 2015. Undergraduate + Graduate. (**four times.**) ~ 50 students each.
  - CSCI X470 “Algorithms” Fall 2016. Undergraduate + Graduate. ~ 50 students.
  - CSCI X720 “Computer Architecture” Summer 2016. Undergraduate + Graduate. ~ 50 students.

Awarded **Outstanding Teaching Assistant Awards** in 2015 and 2016, sponsored by the Office of the Vice President for Instruction of the University of Georgia.

### Mentoring:

- Vedant Khandelwal, Ali Furkan Budak, Garima Gupta, Hale Inan, Thilini Wijesiriwardene, Saber Soleymani, Manas Gaur, Nilayan Bhattacharya.

### Guest Lectures:

- “Contextualizing Mental Health Communications on Social Media using Medical Knowledge for Early Intervention.” University of Dayton, Natural Language Processing, Undergraduate + Graduate. February 2019.
- “Arrays and Algorithms.” University of Georgia, Introduction to Computing and Programming, Undergraduate. April 2017.
- “Objects and Methods in Object-oriented Programming.” University of Georgia, Introduction to Computing and Programming, Undergraduate. April 2016.
- “Teaching at a U.S. University as an *International*.” University of Georgia, Graduate Teaching Seminar (GRSC 7770), Graduate. October 2015.

## SKILLS & INTERESTS

**Programming Languages:** Java, Python, R, C#  
**Machine/Deep Learning Libraries:** PyTorch, Keras, Scikit-learn, Weka API, Mallet  
**Semantic Web:** Apache Jena, RDF/XML, Protege  
**Python Libraries:** Numpy, Scipy, Sci-kit Learn, Pandas, Gensim, Plotly, Matplotlib  
**Database:** My-SQL, Neo4J, MongoDB, PostgreSQL, PL/SQL, MS-SQL

## AWARDS

- Awarded **Graduate School Scholarship** at the University of Georgia, covering full tuition and monthly stipend. *2017*
- **Outstanding Teaching Assistant Awards** sponsored by the Office of the Vice President for Instruction of the University of Georgia. *2016*
- **Outstanding Teaching Assistant Awards** sponsored by the Office of the Vice President for Instruction of the University of Georgia. *2015*
- Awarded **Graduate School Student Travel Grants** at the University of Georgia. *2014, 2017*
- Awarded **Graduate Teaching Assistantship**, at the University of Georgia. *2013, 2017*
- Awarded **Graduate Research Assistantship**, at Stevens Institute of Technology. *2009, 2011*

- Awarded a prestigious **Abroad Graduate Scholarship** from the Government of Turkey for MS and PhD education in the U.S., covering full tuition, monthly stipend and travel. **Amount: \$200K 2008**

#### ACADEMIC COMMUNITY SERVICE

- Program Committee (PC) member of the Web Conference (formerly WWW) 2019, 2021
- PC member as an Associate Chair (AC) of the ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW) 2021
- PC member of the AAAI International Conference on Web and Social Media (ICWSM) 2021
- PC member of the IEEE Big Data Congress 2019, 2021
- PC member of AAAI Fall Symposium on AI for Social Good 2020
- PC member of the Workshop on Combating Online Hostile Posts in Regional Languages during Emergency Situation (CONSTRAINT) (at AAAI) 2021
- PC member of the Workshop on Knowledge-infused Mining and Learning (KiML) (at KDD) 2020
- PC member of the Workshop on Deviant Activities on Social Media (DEVIANCE) (at IEEE BigData) 2020
- PC member of the Workshop on Entity Retrieval and Learning (EYRE '20) (at CIKM) 2020
- Guest Editor for Special Issue of Internet Computing 2020
- PC member of the Southern Data Science Conference 2019
- Reviewer for the following conferences: the Web Conference 2019-2021, AAAI-ICWSM 2018-2021, CSCW 2020-21, IEEE BigData 2018-2019, IEEE-SCC, WebIST, IEEE BigDataSE conferences, among others.
- Reviewer for the following Journals: "Frontiers in Artificial Intelligence", "EPJ Data Science", "Journal of Information Processing and Management", "Journal of Medical Internet Research", "Journal of IEEE Transactions of Knowledge and Data Engineering", "Journal of Transactions on Services Computing", "Information Retrieval Journal", among others.

#### COMMUNITY SERVICE & INVOLVEMENT

**The IDEA Society at the University of Georgia (UGA)** President, May 2013 – December 2017

The IDEA Society was a UGA student organization that facilitated dialog within the community and raised public awareness for diverse cultures, beliefs, traditions, and opinions, through educational, cultural, and humanitarian activities.

- As the president, I had been responsible for: (i) leading executive board meetings, (ii) leading once a semester advisory board meetings that include distinguished members of UGA and Athens, (iii) reaching out to faculty members, administration, students of UGA as well as members of Athens community, (iv) collaborations with other student organizations, UGA offices, departments and external institutions.
- Made significant contributions and have been mostly in the leading role for educational, cultural and humanitarian events that the society organizes, such as Distinguished Speaker Series, Academic Seminars, Annual Award Ceremony, Cultural Food Fairs among other events that promote diversity on campus.
- Developed a synergistic environment that the team of members and volunteers will have opportunities to contribute to the mission and the vision of the organization in a more natural manner.