

Soumya Sanyal

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RESEARCH INTERESTS I am broadly interested in Natural Language Processing and Deep Learning on Graphs. My recent research has focused on explanation based learning and learning to reason with language models.

EDUCATION **University of Southern California**, Los Angeles, CA 2020 – Present
Ph.D. in Computer Science
Advisor: Xiang Ren

Indian Institute of Technology, Kharagpur, India 2012 – 2016
B.Tech in Electronics and Electrical Communication
Minor in Computer Science

WORK EXPERIENCE **Indian Institute Science**, Bangalore, India Aug 2018 – June 2020
Research Assistant, MALL Lab
Hosted by *Partha Talukdar*, Department of Computational and Data Sciences, IISc (supported by Shell grant). Worked on graph neural networks and its applications in knowledge graph completion, protein modeling and material discovery.

Goldman Sachs Services Private Limited, Bangalore, India Jun 2016 – Jul 2018
Senior Analyst, Equities Risk Management
Part of the global team responsible for developing and managing the risk infrastructure of the equities desk. Worked on financial risk modeling, risk engines and risk monitoring.

REFEREED CONFERENCE PROCEEDINGS [1] [Soumya Sanyal](#) and Xiang Ren. **Discretized Integrated Gradients for Explaining Language Models**. *2021 Conference on Empirical Methods in Natural Language Processing*. [[Paper](#) | [Code](#)]

[2] Zhiqing Sun*, Shikhar Vashishth*, [Soumya Sanyal](#)*, Partha Talukdar, and Yiming Yang. **A Re-evaluation of Knowledge Graph Completion Methods**. *2020 Annual Conference of the Association for Computational Linguistics*. (short) [[Paper](#)]

[3] [Soumya Sanyal](#)*, Shikhar Vashishth*, Vikram Nitin, and Partha Talukdar. **Composition-based Multi-Relational Graph Convolutional Networks**. *International Conference on Learning Representations (ICLR-2020)*. [[Paper](#) | [Code](#)]

[4] [Soumya Sanyal](#)*, Shikhar Vashishth*, Vikram Nitin, Nilesh Agrawal, and Partha Talukdar. **InteractE: Improving Convolution-based Knowledge Graph Embeddings by Increasing Feature Interactions**. *Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI-2020)*. [[Paper](#) | [Code](#)]

[5] Ekagra Ranjan, [Soumya Sanyal](#), and Partha Talukdar. **ASAP: Adaptive Structure Aware Pooling for Learning Hierarchical Graph Representations**. *Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI-2020)*. [[Paper](#) | [Code](#)]

REFEREED WORKSHOP PAPERS [6] Aaron Chan, Boyuan Long, Jiashu Xu, [Soumya Sanyal](#), Tanishq Gupta, and Xiang Ren. **SalKG: Learning From Knowledge Graph Explanations for Commonsense Reasoning**. *ICML 2021 Workshop on Theoretic Foundation, Criticism, and Application Trend of Explainable AI* [[Paper](#)]

[7] [Soumya Sanyal](#), Janakiraman Balachandran, Naganand Yadati, Abhishek Kumar, Padmini Rajagopalan, Suchismita Sanyal, and Partha Talukdar. **MT-CGCNN: Integrating Crystal Graph Convolutional Neural Network with Multitask Learning for Material Property Prediction**. *NeurIPS 2018 Workshop on Machine Learning for Molecules and Materials*. [[Paper](#) | [Code](#)]

PREPRINTS [8] [Soumya Sanyal](#), Ivan Anishchenko, Anirudh Dagar, David Baker, and Partha Talukdar. **ProteinGCN: Protein model quality assessment using Graph Convolutional Networks**. *Preprint*. [[Paper](#) | [Code](#)]

SKILLS **Languages:** Python, C++, C, Java, R, JavaScript, AJAX, NodeJS, MatLab, bash
DL Frameworks: Pytorch, Tensorflow, Keras

HONORS AND AWARDS	Graduate Fellowship Award from University of Southern California	2020
	Travel grant for attending AAAI 2020, New York, USA	2020
	Shell travel grant for attending NeurIPS 2018, Montreal, Canada	2018
	Secured 617 rank (among approximately 0.50 million aspirants) in IIT-JEE	2012
	Awarded KVPY scholarships, granted to approximately top 300 meritorious students	2012
	Was in top 1% of total aspirants in National Standard Examination in Physics (NSEP)	2011
	Was in top 1% of total aspirants in National Standard Examination in Astronomy (NSEA)	2011
	3 rd rank among 10,000 students in Inter DPS Science & Mathematics Talent Search Exam	2009
	Awarded National Talent Search Examination (NTSE) Scholarship by NCERT	2008