SOPAN KHOSLA

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PERSONAL SUMMARY

Primary interests in problems related to natural language understanding (NLP), information extraction from medical records and conversations, dialog systems, and coreference resolution. 2+ years of industrial research experience spanning multiple research areas, 9 patents filed in the US and multiple publications in peer-reviewed conferences.

EDUCATION

Carnegie Mellon University, PA, USA — August 2019 - Present

- Master of Science in Language Technologies, Language Technologies Institute
- GPA: 3.96/4.33
- Courses: 10-701 Machine Learning, 11-711 Algo for NLP, 11-747 Neural Networks for NLP, 80-816 Causal Learning

Indian Institute of Technology, Roorkee, India — July 2013 - June 2017

- B.Tech, Computer Science
- GPA: 9.43/10, Department Rank 3
- Director's Gold Medal for Outstanding All-round Achievement
- Courses: Data Structures and Algorithms, Artificial Intelligence, Advanced Graphical Networks, Data Mining

EXPERIENCE

Research Assistant, *Carnegie Mellon University* — August 2019 - Present

Working on information extraction and coreference resolution in medical dialogs, under the guidance of Prof. Carolyn Rose.

- Created a system to extract medically relevant information from doctor-patient conversations. System leverages a multi-speaker BiLSTM for speaker-aware dialogue-modeling, and UMLS (a medical knowledge graph) for grounding raw text into medical concepts.
- Designed an architecture to use semantic-type information to improve entity coreference resolution on state-of-the-art academic datasets.
- Spearheading the planning of a shared-task (competition) on anaphora and coreference resolution in dialog.

Research Engineer, *Adobe Research India* — July 2017 - July 2019

Worked on Natural Language Processing, Social Media Analytics and Marketing Research related projects.

- Used ML and NLP techniques for affect analysis on user-generated content (4 papers, 5 patents filed).
- Developed a technique to quantify latent customer experience from analytics clickstream data (2 papers, 2 patents filed).

SKILLS

- Python (including scikit-learn, pandas, numpy, Django etc.), Java, node.js, Javascript, React, PHP (Laravel), CSS
- Experience with ML frameworks like Pytorch, Tensorflow, and Keras.
- Data mining and cleaning, full-stack development, statistical data modeling

SELECTED PUBLICATIONS (Google Scholar)

- **Sopan Khosla**, Shikhar Vashishth, Jill Fain Lehman, and Carolyn Rose. *Improving Detection and Categorization of Task-relevant Utterances through Integration of Discourse Structure and Ontological Knowledge.* EMNLP 2020.
- **Sopan Khosla***, Rishabh Joshi*, Ritam Dutt*, Alan W. Black, and Yulia Tsvetkov. *LTIatCMU at SemEval-2020 Task 11: Incorporating multi-level features for multi-granular propaganda span identification.* SemEval Workshop at CoLing 2020 (**4th rank in the shared-task**). (* Joint First Authors)
- Kundan Krishna, **Sopan Khosla**, Jeffrey P Bigham, Zachary C Lipton. *Generating SOAP Notes from Doctor-Patient Conversations.* ArXiv Preprint 2020.
- **Sopan Khosla**, Niyati Chhaya, Shivam Jindal, Oindrila Saha, and Milind Srivastava. *Do Events Change Opinions on Social Media? Studying the 2016 US Presidential Debates.* In International Conference on Social Informatics, SocInfo 2019.
- **Sopan Khosla***, Kushal Chawla*, and Niyati Chhaya. *Gated Convolutional Encoder-Decoder for Semi-supervised Affect Prediction.* In Pacific-Asia Conference on Knowledge Discovery and Data Mining, PAKDD 2019. (* Joint First Authors)
- Atanu R. Sinha, Deepali Jain, Nikhil Sheoran, **Sopan Khosla**, and Reshmi Sasidharan. *Surveys without Questions: A Reinforcement Learning Approach.* AAAI 2019.
- **Sopan Khosla**, Niyati Chhaya, and Kushal Chawla. *Aff2Vec: Affect–Enriched Distributional Word Representations.* In Proceedings of the 27th International Conference on Computational Linguistics, CoLing 2018.
- **Sopan Khosla**. *EmotionX-AR: CNN-DCNN autoencoder based emotion classifier.* In Proceedings of the Sixth International Workshop on Natural Language Processing for Social Media, ACL 2018 (**Shared-Task Winner System**).