KUSHAL CHAWLA

University of Southern California

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EDUCATION

University of Southern California $2019 - Present$
Ph.D. in Computer Science

· *Advisors*: Gale Lucas, Jonathan Gratch
· *Research Interests*: Enabling Human Computer Interactions through Natural Language
· *Current GPA*: 4.0/4.0

Indian Institute of Technology Guwahati $2013 - 2017$
Undergraduate in Computer Science & Engineering

· *GPA*: 9.76/10 (Institute Rank 2 in ~ 650)

EXPERIENCE

Researcher, Big Data Experience Labs, Adobe Research $2017 - 2019$

· Primarily focused on understanding affect and semantic properties of textual content and generating text tuned towards it. Publications and patents below.

Intern, Big Data Experience Labs, Adobe Research   *Summer* 2016
Dr. Ritwik Sinha

· Applied Frequent Itemset Mining and Time Series Analysis in a team of two, estimating the size of target audience in terms of bid requests received by Adobe Media Optimizer (AMO).
· Filed a patent and published the work at AdKDD workshop in KDD 2018.

**Intern, Center for Quantum Technologies,
National University of Singapore**   *Summer* 2015
Prof. Rahul Jain

· Enabled the communication of quantum information through a noisy quantum channel via near optimality of Petz Recovery Map.

PUBLICATIONS

· **K Chawla**, N Chhaya, *Session-Based Path Prediction by Combining Local and Global Content Preferences*, In Proceedings of The European Conference on Information Retrieval (ECIR 2020)
· **K Chawla**, N Chhaya, B Srinivasan, *Generating Formality-tuned Summaries Using Input-dependent Rewards*, In Proceedings of the The SIGNLL Conference on Computational Natural Language Learning (CoNLL 2019)
· **K Chawla**, S Khosla, N Chhaya, *Gated Convolutional Encoder-Decoder for Semi-Supervised Affect Prediction*, In Proceedings of the 23rd Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2019)
· **K Chawla**, K Krishna, B Srinivasan, *Improving Generation Quality of Pointer Networks via Guided Attention*, In Proceedings of the 20th International Conference on Computational Linguistics and Intelligent Text Processing (CICLing 2019)

- **K Chawla**, H Singh, A Pramanik, M Kumar, B Srinivasan, *Generating Summaries Tailored to Target Characteristics*, In Proceedings of the 20th International Conference on Computational Linguistics and Intelligent Text Processing (CICLing 2019)
- **K Chawla**, N Chhaya, A Singh, S Vadlamannati, A Agrawal, *Sequence Learning using Content and Consumption Patterns for User Path Prediction*, In Proceedings of the 24th International Conference on Intelligent User Interfaces (IUI 2019).
- S Khosla, N Chhaya, **K Chawla**, *Aff2Vec: Affect–Enriched Distributional Word Representations*, In Proceedings of the 27th International Conference on Computational Linguistics (COLING 2018).
- R Sinha, D Singal, P Maneriker, **K Chawla**, Y Shrivastava, D Pai, A Sinha, *Forecasting Granular Audience Size for Online Advertising*, AdkDD and TargetAd workshop at The 24th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2018).
- N Chhaya, **K Chawla**, T Goyal, P Chanda, J Singh, *Frustrated, Polite, or Formal: Quantifying Feelings and Tone in Email*, In Proceedings of the Second Workshop on Computational Modeling of People's Opinions, Personality, and Emotions in Social Media, NAACL HLT 2018.
- **K Chawla**, SK Sahu, A Anand, *Investigating How Well Contextual Features are Captured by Bi-directional Recurrent Neural Network Models*, In Proceedings of the 14th International Conference on Natural Language Processing (ICON 2017).

RECENT PROJECTS

- Collected a dataset of over one thousand negotiation dialogues for advancing the research in building automated negotiation systems. Overcoming shortcomings in the existing literature, our dialogues cover various aspects of real-world negotiations including preference discussion, emotion expression, exchanging offers, and usage of convincing strategies with personal and logical arguments, while still maintaining a constrained environment for reliable evaluation. Currently, we are annotating these convincing strategies in the dialogues, which will be released along with the dataset. An abstract of this work will be presented at WeCNLP 2020. *Ongoing*
- Built Pilot: my submission for the human-agent negotiation challenge at the International Joint Conference on Artificial Intelligence (IJCAI-PRICAI 2020). It has been selected as one of the finalists in the competition. *Pre-print* *Media coverage* 2020
- Designed a novel task of predicting negotiation outcomes, well before it is complete, to assess the role of natural language in negotiations. *Pre-print* 2020
- Employed semi-supervised learning for identifying informative tweets related to Covid-19 at the WNUT shared task, EMNLP 2020. *Pre-print* 2020

CO-AUTHORED PATENTS

- Machine Learning Techniques for Generating Document Summaries Targeted to Affective Tone; US Patent Publication No. 2020/0257757 A1 [PUBLISHED]
- Generating Summary Content Tuned To a Target Characteristic Using a Word Generation Model; US Patent Publication No. 2020/0242197 A1 [PUBLISHED]
- Detecting Affective Characteristics Of Text With Gated Convolutional Encoder-Decoder Framework; US Patent Publication No. 2020/0192927 A1 [PUBLISHED]
- Content Optimization for Audiences; US Patent Publication No. 2020/0004820 A1 [PUBLISHED]
- Prediction of tone of interpersonal text communications; US Patent Publication No. 2019/0311035 A1 [PUBLISHED]

- Augmented reality predictions using machine learning; US Patent Publication No. 2019/0213403 A1 [PUBLISHED]
- Forecasting Potential Audience Size and Unduplicated Audience Size; US Patent Publication No. 2018/0240149 A1 [PUBLISHED]
- Web Experience Augmentation Based on Local and Global Content Preferences; US Patent Application No. $16/570,910$ [FILED]
- Affect-enriched Vector Representation of Words for use in Machine-Learning Models; US Patent Application No. $16/412,868$ [FILED]

GRADUATE COURSEWORK

Advanced Topics in Deep Learning	Fall 2020
Affective Computing	Spring 2020
Advanced Natural Langauge Processing	Fall 2019

TECHNICAL STRENGTHS

Computer Languages	Python, C++
Libraries and Frameworks	PyTorch, Tensorflow, ParlAI, HuggingFace, React JS, IAGO Negotiation Framework

ACHIEVEMENTS

- Awarded the Annenberg Fellowship for 4 years of Ph.D. at the University of Southern California.
- Recipient of the IIT Guwahati Institute Merit Scholarship (IMS) for the year $2014-15$.
- First Year Undergraduate Institute Topper with GPA 10/10, earning a change of Major from Electrical Engineering to Computer Science.
- All India Rank 62 in KVPY Government of India Fellowship 2012.

ACTIVITIES AND VOLUNTEERING

- Reviewer: ICON 2020, WNUT Workshop at EMNLP 2020
- Sub-reviewer: EMNLP 2020, CoDS-COMAD 2019
- Co-mentored 12 undergraduate researchers during summers at Adobe and USC.
- A Teaching Assistant for Introduction to Computing at IIT Guwahati.
- Volunteer English Teacher for rural students with _eVidyaloka_ NGO in 2018-2019.
- Manager and Marketing Executive at the annual cultural festival of IIT Guwahati: Alcheringa 2015.