KUSHAL CHAWLA

University of Southern California
kchawla@usc.edu ⋄ kushalchawla.github.io

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 $\sim$ 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 1030 negotiations 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. *Ongoing*
- 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
- 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* 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: 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.