

# KUSHAL CHAWLA

University of Southern California

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## EDUCATION

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**University of Southern California**

2019 – *Present*

*PhD in Computer Science*

- *Thesis*: Computational Foundations for Mixed-Motive Human-Machine Dialogue
- *Advisors*: Gale Lucas, Jonathan Gratch
- *Other Committee Members*: Jonathan May, Peter Kim, Maja Mataric
- *Expected Graduation*: April 2024
- *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

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**Research Intern, Google Research**

*Summer 2022*

*Dr. Hannah Rashkin*

- Investigations for addressing trade-offs in designing practical knowledge-grounded dialogue.

**Research Intern, Amazon Alexa**

*Summer 2021*

*Dr. Nikolaos Malandrakis*

- Explored turn-taking in multi-party dialogues to enable more natural conversations with Alexa.

**Predoctoral Researcher, Big Data Experience Lab, Adobe Research**

2017 – 2019

- Contributed to the research in affect recognition from text and conditional text generation tuned towards topical and affective preferences of the user. Publications and patents below.

**Research 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.

**Research 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.

## SELECTED PUBLICATIONS

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- **K Chawla**, I Wu, Y Rong, G Lucas, J Gratch, *Be Selfish, But Wisely: Investigating the Impact of Agent Personality in Mixed-Motive Human-Agent Interactions*, EMNLP 2023.

- **K Chawla**, W Shi, J Zhang, G Lucas, Z Yu, J Gratch, *Social Influence Dialogue Systems: A Survey of Datasets and Models For Social Influence Tasks*, EACL 2023.
- **K Chawla**, R Clever, J Ramirez, G Lucas, J Gratch, *Towards Emotion-Aware Agents for Improved User Satisfaction and Partner Perception in Negotiation Dialogues*, IEEE Transactions on Affective Computing 2023.
- **K Chawla**, G Lucas, J May, J Gratch, *Opponent Modeling in Negotiation Dialogues by Related Data Adaptation*, Findings of NAACL 2022.
- **K Chawla**, R Clever, J Ramirez, G Lucas, J Gratch, *Towards Emotion-Aware Agents For Negotiation Dialogues*, ACHI 2021.
- **K Chawla**, J Ramirez, R Clever, G Lucas, J May, J Gratch, *CaSiNo: A Corpus of Campsite Negotiation Dialogues for Automatic Negotiation Systems*, NAACL 2021.
- A Sancheti, **K Chawla**, G Verma, *LynyrdSkynyrd at WNUT-2020 task 2: semi-supervised learning for identification of informative COVID-19 english tweets*, WNUT, EMNLP 2020.
- **K Chawla**, N Chhaya, *Session-Based Path Prediction by Combining Local and Global Content Preferences*, ECIR 2020.
- **K Chawla**, N Chhaya, B Srinivasan, *Generating Formality-tuned Summaries Using Input-dependent Rewards*, CoNLL 2019.
- **K Chawla**, S Khosla, N Chhaya, *Gated Convolutional Encoder-Decoder for Semi-Supervised Affect Prediction*, PAKDD 2019.
- S Khosla, N Chhaya, **K Chawla**, *Aff2Vec: Affect-Enriched Distributional Word Representations*, COLING 2018.
- N Chhaya, **K Chawla**, T Goyal, P Chanda, J Singh, *Frustrated, Polite, or Formal: Quantifying Feelings and Tone in Email*, PEOPLES, NAACL HLT 2018.
- **K Chawla**, SK Sahu, A Anand, *Investigating How Well Contextual Features are Captured by Bi-directional Recurrent Neural Network Models*, ICON 2017.

## OTHER PROJECTS

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- Built Pilot: Winner of the human-agent negotiation challenge at the International Joint Conference on Artificial Intelligence (IJCAI-PRICAI 2020). Paper Media coverage Presentation 2020
- Designed a novel task of predicting negotiation outcomes, well before it is complete, to assess the role of natural language in negotiations. Paper 2020

## CO-AUTHORED PATENTS

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- Predicting joint intent-slot structure; Publication No. US 2021/0264111 A1
- Web Experience Augmentation Based on Local and Global Content Preferences; Publication No. US 2021/0081467 A1
- Affect-enriched Vector Representation of Words for use in Machine-Learning Models; Patent No. US 11,023,685 B2
- Machine Learning Techniques for Generating Document Summaries Targeted to Affective Tone; Patent No. US 10,891,427 B2
- Generating Summary Content Tuned To a Target Characteristic Using a Word Generation Model; Patent No. US 11,062,087 B2

- Detecting Affective Characteristics Of Text With Gated Convolutional Encoder-Decoder Framework; Publication No. US 2020/0192927 A1
- Content Optimization for Audiences; Patent No. US 10,922,492 B2
- Prediction of tone of interpersonal text communications; Patent No. US 10,796,095 B2
- Augmented reality predictions using machine learning; Patent No. US 10,755,088 B2
- Forecasting Potential Audience Size and Unduplicated Audience Size; Patent No. US 11,080,745 B2

## GRADUATE COURSEWORK

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Advanced Analysis of Algorithms	Spring 2022
Crafting a Research Agenda	Spring 2021
Human Robot Interaction	Spring 2021
Advanced Topics in Deep Learning	Fall 2020
Affective Computing	Spring 2020
Advanced Natural Language Processing	Fall 2019

## TECHNICAL STRENGTHS

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Computer Languages	Python, C++
Libraries and Frameworks	PyTorch, Tensorflow, ParlAI, HuggingFace, React JS, IAGO Negotiation, LIONESS Dialogue Data Collection

## ACHIEVEMENTS

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- **Finalist** for the 2023 Meta Research PhD Fellowship.
- **Nomination for the Best Paper Award** at WeCNLP 2021.
- **First Prize** at the Human-Agent Negotiation League at ANAC, IJCAI 2020.
- 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.

## SERVICE/OTHER INVOLVEMENTS

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- **Workshop Organization:** General Chair for the Second Workshop on Social Influence in Conversations (SICon 2024) to be hosted at EMNLP 2024.
- **Workshop Organization:** Program Chair for the First Workshop on Social Influence in Conversations (*SICon 2023*) at ACL 2023.
- **Invited Talks:** AI Think Tank, Northwestern University (Oct 2023), Google NLP Group (July 2021), Adobe Research (November 2021)
- **Regular reviewer** for the past five years at top-tier AI venues such as AAAI and IJCAI, along with \*ACL venues, including ARR, ACL, EMNLP, and NAACL.
- **Mentored** nearly 15 Undergraduate and Master students at Adobe Research and USC.
- **Teaching Assistant** for USC Analysis of Algorithms (CSCI 570), USC Applied Natural Language Processing (CSCI 544), IIT Guwahati Introduction to Computing (CS 101).
- **Volunteer** English Teacher for rural students with *eVidyaloka* NGO in 2018-2019.
- **Manager and Marketing Executive** at Alcheringa 2015: The cultural festival of IIT Guwahati.