Khyati Mahajan

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EDUCATION

University of North Carolina at Charlotte　　Aug 2018 - May 2023
PhD student in Computer Science under Prof Samira Shaikh　　*GPA: 3.90 / 4*
Computational Sociolinguistics and AI

University of North Carolina at Charlotte　　Aug 2018 - Dec 2020
MS student in Computer Science under Prof Samira Shaikh　　*GPA: 3.90 / 4*
AI, Robotics and Gaming Concentration

Dhirubhai Ambani Institute of ICT　　Jul 2013 - May 2017
Bachelor of Technology in Information and Communication Technology　　*GPA: 3.13 / 4*
with Honors and Minor in Computational Science

RESEARCH EXPERIENCE

Hope Speech Detection for Equality, Diversity and Inclusion at EACL 2021　　Jan 2021 - Present
Research Assistant - *Ribarsky Visualization Center, Dept of Computer Science*　　UNC Charlotte
- Analyzed social media data for the presence of hope speech in multi-class classification task for identifying uplifting, positive speech online using RoBERTa and XLM-RoBERTa for multilingual data
- Ranked 1st in English and Tamil among 31 teams, and ranked 3rd in Malayalam among 30 teams at the Hope Speech Detection task for Equality, Diversity and Inclusion at EACL 2021

Emotional Contagion and Firestorms　　Aug 2018 - Present
Research Assistant - *Multi-phase interdisciplinary project, Depts of Public Policy, Psychology, Communication Studies and Computer Science*　　UNC Charlotte
- Collected relevant Twitter data for studying political expression on social media and its effect on offline movements
- Performed statistical analysis using hierarchical regression analysis to study interactions when different linguistic features are used together using R
- Led the ideation and building of a mock social media platform modeled behind Twitter to perform controlled user studies
- Conducted pilot study and performed exploratory analysis to quantify and measure the properties of the mock platform pertaining to emotional contagion and regulation for computational social science research

Hate Speech, Emotional and Moral Expression Online　　Aug 2019 - Dec 2020
Research Assistant - *Ribarsky Visualization Center, Dept of Computer Science*　　UNC Charlotte
- Analyzed largely unmoderated alternative social media networks for hate speech and misinformation online using data analytics based on Offenseval data and contextual word embeddings such as ELMo and BERT
- Extracted opinions expressed online on public policy and analyzed perception patterns over time using LDA topic modeling
- Studied emotional and moral expression surrounding online social and political movements and their impact on information contagion
- Utilized stance identification for argument mining and summarization by hashtag use to study political and ideological polarization as reflected in online conversations and debates

Emoji Usage on Social Media　　Aug 2018 - May 2020
Research Assistant - *Ribarsky Visualization Center, Dept of Computer Science*　　UNC Charlotte
- Collected emoji usage data associated with the Charlotesville event on Twitter and Gab, a fringe (largely alt-right) community

- Studied differences in symbolism expressed in emoji usage that showcases ideological differences in the political expression on the two platforms
- Studied language use expressing solidarity during the crises events of the Paris attacks, Hurricane Irma, and Charlottesville

Embedded Hunters   May 2016 - Jul 2016
Summer Research Intern - *Computational Intelligence lab, Prof Suresh Sundaram*   NTU, Singapore
- Worked on optimization techniques for ML, studying gradient and coordinate descent
- Worked on the Embedded Hunters algorithm to improve black box optimization techniques
- Contributed to the Black-Box Multi-Objective Optimization Benchmarking Platform on Github

PUBLICATION HISTORY

Towards Understanding How Emojis Express Solidarity in Crisis Events   July 2021
International Conference on Applied Human Factors and Ergonomics (AHFE 2021)   Paper

TeamUNCC: Hope Speech Detection using Transfer Learning with Transformers   April 2021
Workshop on Language Technology for Equality, Diversity, Inclusion at EACL 2021   Paper

Community Connect: A Mock Social Media Platform to Study Online Behavior   March 2021
International Conference on Web Search and Data Mining (WSDM) 2021   Demo Paper

Studying The Effect of Emotional and Moral Language on Information Contagion during the Charlottesville Event   July 2020
Widening NLP Workshop at virtual ACL 2020   Poster

Analyzing Event-Specific Language Use on Gab: A Charlottesville case study   August 2020
Southern Data Science Conference 2020, Atlanta, GA, USA   Poster

Emoji Usage Across Platforms: A Case Study for the Charlottesville Even   Jul 2019
Widening NLP Workshop at ACL 2019, Florence, Italy   Poster
Internal Conference on Computational Social Science 2019, Amsterdam, The Netherlands

CONFERENCES ATTENDED

Computing Conferences
- Virtual International Conference on Computational Linguistics 2020
- Virtual Empirical Methods in Natural Language Processing 2020
- Virtual SIGDIAL 2020
- Virtual Association of Computational Linguistics Conference 2020
- Southern Data Science Conference 2020, Atlanta, GA, USA
- Association of Computational Linguistics Conference 2019, Florence, Italy
- International Conference on Computational Social Science 2019, Amsterdam, The Netherlands

Supporting Widening Participation in Tech
- Carolinas Women in Computing 2020, Charlotte, NC, USA
- Tapia Celebration for Diversity in Computing 2019, San Diego, California, USA

COURSE PROJECTS

Reinforcement Learning Rummy Agent   Aug 2019 - Dec 2019
Machine Learning with Prof Minwoo Lee   UNC Charlotte, USA
- Built a reinforcement learning agent using Q-learning to model the rewards in possible states for maximizing wins in a modified game of Rummy
- Placed 2 out of 20 in rummy tournament against agents built by everyone in the class

Cognitive Biases and Misinformation   Aug 2019 - Dec 2019
Cognitive Science with Prof Doug Markant   UNC Charlotte, USA
- Proposed a theoretical framework for the the role cognitive biases could play when in the spread of misinformation
- Studied various known cognitive biases and how they might interact, leading to the acceptance of a wider range of cognitive dissonance

CHISSLR - Interactive Annotation for ML   Aug 2019 - Dec 2019
Data Analytics with Ryan Wesslen   UNC Charlotte, USA
· Ported CHISSL, an interactive labelling tool, into an R shiny app and improved integration with other visualization tools
· Improved flow for helping improve classification of mislabelled examples hand-in-hand with learning

8-puzzle and n-queens   Aug 2018 - Dec 2018
Intelligent Systems with Prof Dewan Tanvir Ahmed   UNC Charlotte, USA
· Studied A* search through the 8-puzzle problem for exploring possible nodes to find an optimized solution using the misplaced tile and Manhattan distance heuristics using Python
· Studied hill climbing techniques for finding maxima through the n-queens problem to find an optimized solution using combinations of sideways move and random restart strategies

Understanding Our Views   Aug 2018 - Dec 2018
Natural Language Processing with Prof Samira Shaikh   UNC Charlotte, USA
· Studied the Reddit community CMV (Change My View) for factors that led to a viewpoint being changed using Python and NLTK
· Analyzed change through constructive critical conversation and the components of such a conversation - contradictory examples along with rational arguments around them provided great impact

HONORS AND AWARDS

· *CRA-WP Grad Cohort for Widening Participation 2021 scholar* at New Orleans, LA

· *Graduate Assistant Support Plan (GASP)* since Fall 2018 from *UNC Charlotte* for tuition support

· *Tapia Celebration for Diversity in Computing scholar* at College of Computing and Informatics (CCI), UNC Charlotte

· *Certificate of Recognition* for outstanding academic achievement by *Duke University, North Carolina, US*. Also nominated for the Duke Talent Identification Program, India 2009 at IIM-Ahmedabad from 500 students all over India

LANGUAGES & SKILLS

Languages English, Hindi, Marathi, Gujarati, French

Skills Python, R, Data Science, Data Analysis, Data Visualization, Natural Language Processing, Natural Language Understanding, Natural Language Generation

STUDENT INVOLVEMENT & VOLUNTEERING

· *Graduate Life Ambassador* at UNC Charlotte	2020-Present
· *Student Panelist* for International Cultural Panel at UNC Charlotte	2020-Present
· *Founding Secretary*, the Club for AI Research, UNC Charlotte	2019-2020
· *Founding Member*, Girls Who Code, UNC Charlotte	2019-2020
· *Member*, ACM-W, UNC Charlotte	2018-2020
· *Vice Chairperson*, IEEE Student Body (SB), DAIICT	2016-2017
· *Chairperson*, IEEE SB Women In Engineering Affinity Group, DAIICT	2016-2017