

# 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  
Computational Sociolinguistics and AI GPA: 3.90 / 4
- University of North Carolina at Charlotte** Aug 2018 - Dec 2020  
MS student in Computer Science under Prof Samira Shaikh  
AI, Robotics and Gaming Concentration GPA: 3.90 / 4
- Dhirubhai Ambani Institute of ICT** Jul 2013 - May 2017  
Bachelor of Technology in Information and Communication Technology  
with Honors and Minor in Computational Science GPA: 3.13 / 4

## 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 1<sup>st</sup> in English and Tamil among 31 teams, and ranked 3<sup>rd</sup> 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 Charlottesville 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 Annual Conference of the North American Chapter of the Association for Computational Linguistics, NAACL 2021 (D&I Student Chair)
- Virtual International Conference on Computational Linguistics, COLING 2020
- Virtual Empirical Methods in Natural Language Processing, EMNLP 2020 (Volunteer)
- Virtual SIGDIAL 2020
- Virtual Association of Computational Linguistics Conference, ACL 2020 (Volunteer)
- Southern Data Science Conference, SDSC 2020, Atlanta, GA, USA
- Association of Computational Linguistics Conference, ACL 2019, Florence, Italy
- International Conference on Computational Social Science, IC2S2 2019, Amsterdam, The Netherlands

### **Supporting Widening Participation in Tech**

- Mini Fleurix Conference 2021, Charlotte, NC, USA
- Carolinas Women in Computing 2020, Charlotte, NC, USA
- Tapia Celebration for Diversity in Computing 2019, San Diego, California, USA

## **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 Fellow* at UNC Charlotte 2021-2022
- *Graduate Life Ambassador* at UNC Charlotte 2020-2021
- *Student Panelist* for International Cultural Panel at UNC Charlotte 2020-2021
- *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