# KALPESH KRISHNA

 $kalpesh@cs.umass.edu \diamond LinkedIn \diamond Github \diamond Twitter \diamond Google Scholar \diamond Semantic Scholar$ WEBPAGE: https://martiansideofthemoon.github.io

## **EMPLOYMENT**

Google (Bard) Research Scientist August '23 - Present New York, NY

#### **EDUCATION**

University of Massachusetts, Amherst

Sept '18 - Sept '23

MS/PhD in Computer Science (advised by *Prof. Mohit Iyyer*)

Major GPA: 4.0/4.0

Indian Institute of Technology, Bombay

July '14 - July '18

(advised by *Prof. Preethi Jyothi*)

Major GPA: 9.74/10 (2<sup>nd</sup> among 66 students), Minor GPA: 10/10

B. Tech in Electrical Engineering, Minor in Computer Science

#### **INTERNSHIPS**

Allen Institute for Artificial Intelligence (AI2)

June '22 - August '22

Seattle, WA

Google Research Language

Student Researcher under John Wieting

October '21 - May '22 Amherst, MA (remote)

Google Research India

Research Intern under Partha Talukdar and Bidisha Samanta

Research Intern under Kyle Lo, Arman Cohan, Pradeep Dasigi

June '21 - September '21 Bangalore, India (remote)

Google Brain

May '20 - August '20

Mountain View, CA (remote)

Google Research Language

Research Intern under Aurko Roy

Research Intern under Gaurav Singh Tomar and Ankur Parikh

May '19 - September '19 New York, NY

Toyota Technological Institute at Chicago

Research Intern under Karen Livescu, Liang Lu and Kevin Gimpel

May '17 - July '17 Chicago, IL

Mozilla Foundation

Google Summer of Code Intern under Armen Zambrano

May '16 - August '16 Mumbai, India / London, UK

## AWARDS & SCHOLARSHIPS

- Google PhD Fellowship 2021-23 (list of recipients)
- Outstanding Paper Award EACL 2023 (12 out of 1600 submissions)
- Sharad Maloo Memorial Gold Medal at IIT Bombay (For outstanding academic and extra-curricular achievements)

- Outstanding / Highlight Reviewer at ACL 2020, 2022; ICLR 2021, 2022 (Top 7-12% reviewers)
- PhD Candidacy with Distinction at UMass Amherst
- Cargill Global Leaders Scholarship 2016-18 (Awarded by the IIE and Cargill for academic, extra-curricular and leadership achievements)

#### INVITED TALKS

- University of Texas at Dallas, November 2023 (Towards robust long-form text generation evaluation)
- University of Pittsburgh, November 2023 (Towards robust long-form text generation evaluation) (Paraphrasing evades detection of AI-generated text, but retrieval is an effective defense)
- NLP with Friends, September 2023 (Paraphrasing evades detection of AI-generated text, but retrieval is an effective defense)
- IBM Research, July 2023 (Towards robust long-form text generation evaluation)
- University of Toronto, July 2023 (Paraphrasing evades detection of AI-generated text, but retrieval is an effective defense)
- Allen Institute for Artificial Intelligence, May 2023 Google Deepmind, May 2023 NVIDIA Applied Deep Learning Research, April 2023 Apple Machine Learning Research, March 2023 (Towards robust long-form text generation systems)
- University of Washington, September 2022 (RankGen: Improving Text Generation with Large Ranking Models)
- University of Southern California, July 2021 University of Texas at Austin, June 2021 (Progress in text generation & perils of its evaluation)
- Google Research, May 2021 (Hurdles to progress in long-form question answering)
- IBM Research, April 2020 (On model extraction attacks on BERT-based APIs)
- AllenNLP Summit at AI2, August 2019 (Lightning talks on using AllenNLP for education)
- UMass Data Science Research Symposium, April 2019 (On hierarchical question-answer generation)

## ACADEMIC SERVICE

• Program Committee / Reviewer for 100+ total papers in EMNLP '19-23; ACL '19-'23; ICLR '21-'24; NAACL '19-'22; NeurIPS '21-'23; ICML '23, EACL '23; IJCV '19; NEJLT '23 and several workshops in NeurIPS, ACL, NAACL, EMNLP

Outstanding / Highlight Reviewer at ACL 2020, 2022; ICLR 2021, 2022 (Top 7-12% reviewers)

- Area Chair for EACL 2024, NeurIPS 2023 RoMo workshop
- Student Volunteer at ACL '19 (awarded ACL 2019 Student Scholarship), AKBC '19, ICLR '20

## TEACHING / MENTORING / OTHER SERVICE

- Co-organized a weekly talk series "Machine Learning and Friends Lunch" at UMass (2019-22)
- Mentored five UMass undergraduates on their honors thesis (2019-2021) and four student teams for the industrial mentorship projects (COMPSCI 696) in Spring 2019-2022
- Graduate Teaching Assistant at UMass Amherst for Deep Learning for NLP (Spring 2019) and Advanced Natural Language Processing (Fall 2020)
- Institute Student Mentor at IIT Bombay (2017-18)
- Manager, Web and Coding Club at IIT Bombay (2016-17)

  Awarded the Institute Organizational Color 2016-17 at IIT Bombay for achievements while leading the Web and Coding Club
- Teaching Assistant at IIT Bombay in Computer Programming (2016) and Linear Algebra (2017)
- Web Coordinator for Mood Indigo 2016 at IIT Bombay

#### PUBLICATIONS AND PREPRINTS

Also see my Google Scholar profile. NeurIPS, ICLR, ACL, EMNLP, NAACL, EACL are top-tier peer-reviewed conferences in ML/NLP with an acceptance rate of 20-30%.

## **Selected Papers**:

- 1. FActScore: Fine-grained Atomic Evaluation of Factual Precision in Long Form Text Generation Sewon Min\*, Kalpesh Krishna\*, Xinxi Lyu, Mike Lewis, Wen-tau Yih, Pang Wei Koh, Mohit Iyyer, Luke Zettlemoyer, Hannaneh Hajishirzi EMNLP 2023
- 2. Paraphrasing evades detectors of AI-generated text, but retrieval is an effective defense Kalpesh Krishna, Yixiao Song, Marzena Karpinska, John Wieting, Mohit Iyyer NeurIPS 2023
- 3. LongEval: Guidelines for Human Evaluation of Faithfulness in Long-form Summarization Kalpesh Krishna, Erin Bransom, B. Kuehl, Mohit Iyyer, Pradeep Dasigi, Arman Cohan, Kyle Lo EACL 2023 (Outstanding Paper Award)
- 4. RankGen: Improving Text Generation using Large Ranking Models Kalpesh Krishna, Yapei Chang, John Wieting, Mohit Iyyer EMNLP 2022
- Hurdles to Progress in Long-form Question Answering Kalpesh Krishna, Aurko Roy, Mohit Iyyer NAACL 2021

6. Reformulating Unsupervised Style Transfer as Paraphrase Generation

Kalpesh Krishna, John Wieting, Mohit Iyyer

**EMNLP 2020** 

7. Thieves on Sesame Street! Model Extraction of BERT-based APIs

Kalpesh Krishna, Gaurav S. Tomar, Ankur P. Parikh, Nicolas Papernot, Mohit Iyyer ICLR 2020

## Other Papers:

8. On the Risks of Stealing the Decoding Algorithms of Language Models

Ali Naseh, Kalpesh Krishna, Mohit Iyyer, Amir Houmansadr

CCS 2023

9. ezCoref: Towards Unifying Annotation Guidelines for Coreference Resolution

Ankita Gupta, Marzena Karpinska, Wenlong Zhao, Kalpesh Krishna, Jack Merullo, Luke Yeh, Mohit Iyyer, Brendan O'Connor

EACL 2023 (Findings)

10. NL-Augmenter: A Framework for Task-Sensitive Natural Language Augmentation

Kaustubh D. Dhole and others

**NEJLT 2023** 

11. SLING: Sino Linguistic Evaluation of Large Language Models

Yixiao Song, Kalpesh Krishna, Rajesh Bhatt, Mohit Iyyer

**EMNLP 2022** 

12. Document-Level Literary Machine Translation with Parallel Paragraphs from World Literature

Katherine Thai\*, Marzena Karpinska\*, Kalpesh Krishna, Bill Ray, Moira Inghilleri, John Wieting and Mohit Ivver

**EMNLP 2022** 

13. Few-shot Controllable Style Transfer for Low-Resource Multilingual Settings

Kalpesh Krishna, Xavier Garcia, Deepak Nathani, Bidisha Samanta, Partha Talukdar

ACL 2022

14. RELiC: Retrieving Evidence for Literary Claims

Katherine Thai, Yapei Chang, Kalpesh Krishna, Mohit Iyyer

ACL 2022

15. User and Technical Perspectives of Controllable Code Generation

Stephanie Houde, Vignesh Radhakrishna, Praneeth Reddy, Juie Darwade, Haoran Hu, Kalpesh

Krishna, Mayank Agarwal, Kartik Talamadupula, Justin D. Weisz

NeurIPS HCAI workshop 2022 (short paper)

16. Do Long-Range Language Models Actually Use Long-Range Context?

Simeng Sun, Kalpesh Krishna, Andrew Mattarella-Micke and Mohit Iyyer

**EMNLP 2021** 

17. Weakly-Supervised Open-Retrieval Conversational Question Answering

Chen Qu, Liu Yang, Cen Chen, W. Bruce Croft, Kalpesh Krishna and Mohit Iyyer

**ECIR 2021** 

18. Long Document Summarization in a Low Resource Setting using Pretrained Language Models Ahsaas Bajaj, Pavitra Dangati, *Kalpesh Krishna*, Pradhiksha Kumar, Rheeya Uppaal, Bradford Windsor, Eliot Brenner, Dominic Dotterrer, Rajarshi Das, Andrew McCallum ACL Student Research Workshop 2021

19. An Analysis of Frame-skipping in Reinforcement Learning

Shivaram Kalyanakrishnan, Siddharth Aravindan, Vishwajeet Bagdawat, Varun Bhatt, Harshith Goka, Archit Gupta, *Kalpesh Krishna*, Vihari Piratla arXiv 2021

20. SunPy: A Python package for Solar Physics

Stuart J. Mumford and others

**JOSS 2020** 

21. Generating Question-Answer Hierarchies

Kalpesh Krishna, Mohit Iyyer

ACL 2019

22. Syntactically Supervised Transformers for Faster Neural Machine Translation

Nader Akoury, Kalpesh Krishna, Mohit Iyyer

**ACL 2019** 

23. Trick or TReAT: Thematic Reinforcement for Artistic Typography

Purva Tendulkar, *Kalpesh Krishna*, Ramprasaath R. Selvaraju, Devi Parikh

ICCC 2019 (Best Presentation Award)

24. Revisiting the Importance of Encoding Logic Rules in Sentiment Classification

Kalpesh Krishna, Preethi Jyothi, Mohit Iyyer

EMNLP 2018 (short paper)

25. Hierarchical Multitask Learning for CTC-based Speech Recognition

Kalpesh Krishna, Shubham Toshniwal, Karen Livescu

arXiv 2018

26. A Study of All-Convolutional Encoders for Connectionist Temporal Classification

Kalpesh Krishna, Liang Lu, Kevin Gimpel, Karen Livescu

ICASSP 2018 ( Awarded SPS Travel Grant)

Other Projects: https://martiansideofthemoon.github.io/other\_projects/

#### OTHER ACHIEVEMENTS

- CICS Graduate Fellowship 2018, Victor Lesser Graduate Scholarship 2019 at UMass Amherst
- Selected for JSALT '17, organized by JHU's Center for Language and Speech Processing<sup>2</sup>
- Institute Academic Prize 2015-16 at IIT Bombay
- Top 10 at the Astronomy Olympiad's Indian Selection Camp for IOAA '14, (20000 candidates)
- All India Rank 93 in JEE Advanced '14 (out of 126,000 candidates)
  All India Rank 34 in JEE Mains '14 (out of 1,400,000 candidates)

<sup>&</sup>lt;sup>2</sup>Couldn't attend due to clashing college schedule

All India Top 100 in CBSE XII '14 (out of 1,000,000 candidates) All India Rank 2 in ICSE '12 (out of 132,000 candidates)

Awarded by Pune city institutions for being the city topper in each of these exams. Featured in the Pune city editions of several newspapers including The Times of India and The Indian Express.

- Passed the National Standard Exam in Physics '14 and National Standard Exam in Chemistry '14, the first rounds in the Indian selection procedure for the International Physics Olympiad and the International Chemistry Olympiad respectively
- Selected for the Kishore Vaigyanik Protsahan Yojana (KVPY) Award '14 (1,000/20,000 applicants)

## EXTRA-CURRICULAR

- Board Member of the Hampshire Bird Club in Massachusetts (2022-24)
- Blogging Active blogger on MS/PhD applications, biking, bird photography and computer science
- Led the development of a beginner's programming wiki with the Web and Coding Club, IIT Bombay
- StackOverflow Active contributor in 2016-17, top 6% overall
- Open Source Actively contributed to Mozilla in 2015-16 including QoC 2015, GSoC 2016
- Karate Black Belt (1st Dan) trained in Kyokushin Kai for seven years, district level winner
- Abacus & Mental Arithmetic Aloha grandmaster, national and state level winner

Hobbies — birdwatching, macro & bird photography, hiking, biking, reading, star gazing