

# Atharva Kulkarni

## Ph.D. in Computer Science | University of Southern California

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**Research Interests:** Theoretical & Empirical Understanding of LLMs | Learning Dynamics | Trustworthy NLP

## Education

<b>Present</b> <b>Aug 2024</b>	<b>University of Southern California   Thomas Lord Dept. of Computer Science</b> Doctor of Philosophy (Ph.D.) in Computer Science ‣ Advisor: <a href="#">Swabha Swayamdipta</a> ‣ Honors: Viterbi School of Engineering Fellowship (AY 2024-25)	<b>Los Angeles, CA</b>
<b>May 2025</b> <b>Jan 2025</b>	<b>University of California, Berkeley   Simons Institute for the Theory of Computing</b> Visiting Ph.D. Student   Program: Special Year on LLMs and Transformers (Part 2) [🔗]	<b>Berkeley, CA</b>
<b>May 2024</b> <b>Aug 2022</b>	<b>Carnegie Mellon University   Language Technologies Institute</b> Master of Science (M.S.) in Language Technologies ‣ Advisors: <a href="#">Graham Neubig</a> & <a href="#">Barnabás Póczos</a> ‣ Collaborators: <a href="#">Aditi Raghunathan</a> , <a href="#">Ameet Talwalkar</a> , <a href="#">David Mortensen</a> , <a href="#">Emma Strubell</a> ‣ Honors: CMU LTI Research Fellowship (AY 2023-24)	<b>Pittsburgh, PA</b>
<b>May 2020</b> <b>Aug 2016</b>	<b>Savitribai Phule Pune University   PVG's College of Engineering and Technology</b> Bachelor of Engineering (B.E.) in Computer Science	<b>Pune, India</b>

## Experience

<b>Aug 2024</b> <b>May 2024</b>	<b>Apple Inc.   Siri &amp; Information Intelligence (SII)</b> Machine Learning Research Intern   Mentors: <a href="#">Yuan Zhang</a> & <a href="#">Hong Yu</a> Collaborators: <a href="#">Joel Moniz</a> , <a href="#">Xiou Ge</a> , <a href="#">Bo-Hsiang Tseng</a> , & <a href="#">Dhivya Piraviperumal</a> ‣ Evaluating evaluation metrics for hallucination detection in LLM-generated texts (under review ACL'25).	<b>Seattle, WA</b>
<b>Aug 2023</b> <b>May 2023</b>	<b>Apple Inc.   Siri &amp; Information Intelligence (SII)</b> Machine Learning Research Intern   Mentors: <a href="#">Shruti Bhargava</a> & <a href="#">Hong Yu</a> Collaborators: <a href="#">Bo-Hsiang Tseng</a> , <a href="#">Joel Moniz</a> , & <a href="#">Dhivya Piraviperumal</a> ‣ Synthetic data generation using LLMs for dialog state tracking. (EACL'24)	<b>Seattle, WA</b>
<b>July 2022</b> <b>March 2021</b>	<b>IIIT Delhi   Laboratory for Computational Social Systems (LCS2) [🔗]</b> Predoctoral Researcher   Advisor: <a href="#">Tanmoy Chakraborty</a> ‣ Hate speech detection under subpopulation and covariate shifts. (KDD'23) ‣ Semantic role labeling of multimodal memes using optimal transport. (EACL'23) ‣ Claim span identification using structural constraints and domain-specific rationales. (EMNLP'22) ‣ Sarcasm explanation generation in multi-modal multi-party dialogues. (ACL'22)	<b>Delhi, India</b>
<b>July 2022</b> <b>Dec 2021</b>	<b>IIT Bombay   Cognitive &amp; Behavioural Neuroscience Laboratory [🔗]</b> Research Collaborator   Advisor: <a href="#">Rashmi Gupta</a> ‣ Evaluating state-of-the-art LLMs in diagnosing comorbid mental health conditions, identifying their key limitations, and creating a novel dataset to address these gaps. (EMNLP'24)	<b>(Remote) Powai, India</b>

## Selected Publications (\* denotes equal contribution)

- [11] **Evaluating Evaluation Metrics – The Mirage of Hallucination Detection**  
[Atharva Kulkarni](#), [Yuan Zhang](#), [Joel Moniz](#), [Xiou Ge](#), [Bo-Hsiang Tseng](#), ..., [Swabha Swayamdipta](#), [Hong Yu](#).  
*Annual Meeting of the Association for Computational Linguistics* [Under review ACL'25]
- [10] **Still Not Quite There! Evaluating Large Language Models for Comorbid Mental Health Diagnosis** [PDF | code]  
[Amey Hengle\\*](#), [Atharva Kulkarni\\*](#), [Shantanu Patankar](#), ..., [Rashmi Gupta](#)  
*Conference on Empirical Methods in Natural Language Processing* [EMNLP'24]
- [9] **Multitask Learning Can Improve Worst-Group Outcomes** [PDF | code]  
[Atharva Kulkarni\\*](#), [Lucio Dery\\*](#), [Amrith Setlur](#), [Aditi Raghunathan](#), [Ameet Talwalkar](#), [Graham Neubig](#)  
*Transactions of Machine Learning Research* [TMLR'24]

- [8] **SynthDST: Synthetic Data is All You Need for Few-Shot Dialog State Tracking** [PDF | code] [Oral Presentation]  
Atharva Kulkarni, Bo-Hsiang Tseng, Joel Moniz, Dhivya Piraviperumal, Hong Yu, Shruti Bhargava.  
*Conference of the European Chapter of the Association for Computational Linguistics* [EACL'24]
- [7] **The Student Becomes the Master: Matching GPT3 on Scientific Factual Error Correction** [PDF | code]  
Dhananjay Ashok, Atharva Kulkarni, Hai Pham, Barnabás Póczos.  
*Findings of the Association for Computational Linguistics* [Findings EMNLP'23]
- [6] **Counting the Bugs in ChatGPT's Wugs: A Multilingual Investigation into the Morphological Capabilities of a Large Language Model** [PDF | code]  
Leonie Weissweiler, Valentin Hofmann, ..., Atharva Kulkarni, ..., Hinrich Schuetze, Kemal Oflazer, David Mortensen.  
*Conference on Empirical Methods in Natural Language Processing* [EMNLP'23]
- [5] **Learning & Reasoning Multifaceted Longitudinal Data for Poverty Estimates and Livelihood Capabilities of Lagged Regions in Rural India** [PDF] [AI for Social Good Award]  
Atharva Kulkarni, Raya Das, Ravi Srivastava, Tanmoy Chakraborty  
*International Joint Conference on Artificial Intelligence* [IJCAI'23]
- [4] **Revisiting Hate Speech Benchmarks: From Data Curation to System Deployment** [PDF | code]  
Atharva Kulkarni\*, Sarah Masud\*, Vikram Goyal, Tanmoy Chakraborty  
*ACM SIGKDD Conference on Knowledge Discovery and Data Mining* [KDD'23]
- [3] **Characterizing Entities in Harmful Memes: Who is Hero, Villain, Victim?** [PDF | code]  
Shivam Sharma\*, Atharva Kulkarni\*, ..., Preslav Nakov, Md. Shad Akhtar, Tanmoy Chakraborty  
*Conference of the European Chapter of the Association for Computational Linguistics* [EACL'23]
- [2] **Empowering the Fact-checkers! Automatic Identification of Claim Spans on Twitter** [PDF | code]  
Megha Sundriyal\*, Atharva Kulkarni\*, Vaibhav Pulastya, Md. Shad Akhtar, Tanmoy Chakraborty  
*Conference on Empirical Methods in Natural Language Processing* [EMNLP'22]
- [1] **When did you become so smart, oh wise one?! Sarcasm Explanation in Multi-modal Multi-party Dialogues** [PDF | code] [Oral Presentation]  
Shivani Kumar\*, Atharva Kulkarni\*, Md. Shad Akhtar, Tanmoy Chakraborty  
*Annual Meeting of the Association for Computational Linguistics* [ACL'22]

## Academic Service

Conference Reviewer	COLM'25, ARR'25, TMLR'24, ARR'24, EMNLP'23, ACL'23, EMNLP'22, ICON'22
Workshop Reviewer	WiNLP'24, SSLTheoryPractice NeurIPS'23, R0-FoMo NeurIPS'23
Conference Volunteer	EACL'24, EACL'23, ACL'21, EACL'21

## Teaching & Mentorship Roles

<b>Mentor – CS Undergraduate Mentorship Program   USC</b>	Fall'24
> Mentoring USC undergraduate students for starting out in research (Mentee – Tshephang Makubate & Grace Li).	
<b>Teaching Assistant – Advanced NLP   CMU</b>	Fall'23
> TA for 11-711 Advanced NLP taught by Prof. Daniel Fried. Designed assignments and guided teams for course projects.	
<b>Teaching Assistant – Introduction to NLP   CMU</b>	Spring'23
> TA for 11-611 Intro to NLP taught by Prof. David Mortensen. Designed assignments and guided teams for course projects.	
<b>Mentor – AI Undergraduate Mentorship Program   CMU</b>	Fall'22
> Mentored CMU undergraduate students for starting out in research (Mentee – Yi (Nicole) Xiang).	

## Talks

### SynthDST: Synthetic Data is All You Need for Few-Shot Dialog State Tracking

- > NiklasOPF AI podcast [video link] Nov 2024 – YouTube
- > EACL'24 Oral Presentation March 2024 – St. Julian's, Malta
- > Siri & Information Intelligence (SII), Apple. Inc Aug 2024 – Seattle, WA

### When did you become so smart, oh wise one?! Sarcasm Explanation in Multi-modal Multi-party Dialogues

- > Student Research Symposium, CMU LTI Aug 2022 – Pittsburgh, PA

## Honours & Awards

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1. **USC Viterbi Fellowship (2024-25)** – Awarded to selected incoming PhD student at USC, covering full tuition & stipend.
2. **CMU LTI Research Fellowship (2023-24)** – Awarded to selected MLT students at CMU, covering full tuition & stipend.
3. **Best Paper – AI for Social Good | IJCAI’23** [🔗] – Poverty estimation using neural networks for rural Indian setting.
4. **Shared Task Winner | WASSA @ EACL’21** [🔗] – Empathy & distress detection in reaction to news stories.
5. **Shared Task Winner | TechDoFication @ ICON’20** [🔗] – Coarse-grained technical domain identification of documents for indigenous Indian languages.
6. **Bachelor’s Thesis Award | ZS ASPIRE 2020** [🔗] – 2<sup>nd</sup> place amongst 33,000 teams & cash prize of 2,00,000 INR for Bachelor’s Thesis project.

## References

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**Prof. Swabha Swayamdipta**

*Assistant Professor, University of Southern California, USA* [🔗, @]

**Prof. Barnabás Póczos**

*Associate Professor, Carnegie Mellon University, USA* [🔗, @]

**Prof. Graham Neubig**

*Associate Professor, Carnegie Mellon University, USA* [🔗, @]