

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

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

Experience

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| Aug 2024 May 2024 | Apple Inc. Siri & Information Intelligence (SII) <i>Machine Learning Research Intern Mentors: Yuan Zhang & Hong Yu</i> <i>Collaborators: Bo-Hsiang Tseng, Joel Moniz, Xiou Ge, & Dhivya Piraviperumal</i> | Seattle, WA |
| Aug 2023 May 2023 | Apple Inc. Siri & Information Intelligence (SII) <i>Machine Learning Research Intern Mentors: Shruti Bhargava & Hong Yu</i> <i>Collaborators: Bo-Hsiang Tseng, Joel Moniz, & Dhivya Piraviperumal</i> | Seattle, WA |
| July 2022 March 2021 | IIIT Delhi Laboratory for Computational Social Systems (LCS2) [🌐] <i>Predoctoral Researcher Advisor: Tanmoy Chakraborty</i> | Delhi, India |
| July 2022 Dec 2021 | IIT Bombay Cognitive & Behavioural Neuroscience Laboratory [🌐] <i>Research Collaborator Advisor: Rashmi Gupta</i> | (Remote) Powai, India |

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]
[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]
Shivani Kumar*, Atharva Kulkarni*, Md. Shad Akhtar, Tanmoy Chakraborty
Annual Meeting of the Association for Computational Linguistics [ACL'22]

Academic Service

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| 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 |

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

Teaching & Mentorship Roles

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| Mentor – CS Undergraduate Mentorship Program USC | Fall'24 |
| Teaching Assistant – Advanced NLP CMU | Fall'23 |
| Teaching Assistant – Introduction to NLP CMU | Spring'23 |
| Mentor – AI Undergraduate Mentorship Program CMU | Fall'22 |

Honours & Awards

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