

Atrey Desai

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EDUCATION

University of Maryland, College Park

Exp. Graduation: May 2027

B.S. in Computer Science (Honors) & B.A. in Linguistics (Minor in Korean Studies)

Advisors: Prof. Rachel Rudinger & Prof. Jordan Boyd-Graber

Coursework: Natural Language Processing (Grad), Commonsense Reasoning (Grad), Machine Learning, Data Science, Parallel Computing*, Computer Systems, Syntax, Phonetics, Psycholinguistics.

EXPERIENCE

Learn Prompting

May 2025 – present

Member of Technical Staff (San Francisco, CA)

- Researching robustness of AI safety judges against CBRNE-related adversarial content.
- Running Hackaprompt, the world's largest red-teaming hackathon, overseeing user engagement and technical challenges.

University of Maryland, College Park

May 2024 – present

Undergrad Researcher, CLIP Lab

Advisors: Prof. Rachel Rudinger & Prof. Jordan Boyd-Graber

- Validated robustness of LLM-generated MCQs for unintended artifacts to assess if questions are solvable without full context, providing a framework that improves the reliability of synthetic data for benchmark evaluation.
- Architected an adversarial benchmark to test VLM capabilities in detecting out-of-context (OOC) video-based misinformation on social media based on multimodal clues and user interactions.

The University of Texas at Arlington

Feb 2024 – present

Visiting Researcher, ACL2 Lab & NSF

Advisor: Prof. Kenny Zhu

- Designed AniVoice-cat, a dataset of 26,000+ annotated cat vocalizations from 250+ hours of video and identified 57 unique cat phones, establishing a foundational resource for computational research in non-human communication.
- Improved transcription pipeline using PANNs and HuBERT models to 96% accuracy with 93% top-5 accuracy in action recognition, setting a new state-of-the-art for automated animal vocalization analysis.

University of Maryland, College Park

Dec 2023 – Aug 2024

Researcher, FIRE Sustainability Analytics Lab

Advisor: Prof. Thanicha Ruangmas

- Developed Python pipeline for environmental impact assessments of U.S. emissions, enabling more efficient policy.
- Drafted a framework to guide evidence-based policymaking on climate restoration strategies.

Brown University

Dec 2020 – June 2023

Researcher, Reinforcement Learning at Brown Group

Advisor: Prof. Michael Littman

- Developed a custom RL environment that empowered non-technical users to programmatically solve complex tasks by defining reward functions and specifying agent behavior, reducing task setup time.
- Published and presented research at two top-tier workshops (AAAI, RLDM), demonstrating how human-readable interfaces enable fine-grained control during inference and improve AI-human interaction in robotics.

PUBLICATIONS

Preprints

* – equal contribution

4. **BenchMarker: An Education-Inspired Toolkit for Highlighting Flaws in Multiple-Choice Benchmarks.**
Nishant Balepur, Bhavya Rajasekaran, Jane Oh, Michael Xie, **Atrey Desai**, ..., Jordan Boyd-Graber.
(Under Review at ACL).
3. **Emergence of Filler–Gap Mechanisms in Developmentally Constrained Language Models.**
Atrey Desai and Sathvik Nair.
(Under Review at TLS, ACL).
2. **Test-Time Reasoners Are Strategic Multiple-Choice Test-Takers.**
Nishant Balepur, **Atrey Desai** and Rachel Rudinger.
arXiv:2510.07761 (Under Review at ACL Rolling Review).

1. A Preview of Computational Animal Linguistics.

Atrey Desai, Tirza Panunto, Lindsay Pike, Theron S. Wang, Tuan M. Dang, Hridayesh Lekhak and Kenny Q. Zhu.
(*Under Review at Computational Linguistics*).

Conference Publications

2. Language Models Generate Multiple-Choice Questions with Artifacts.

Atrey Desai, Nishant Balepur and Rachel Rudinger.

Mid-Atlantic Student Colloquium on Speech, Language and Learning (MASC-SLL), 2025.

1. Reinforcement Learning As End-User Trigger-Action Programming.

Chace Hayhurst, Hyojae Park, **Atrey Desai**, Suheidy De Los Santos and Michael Littman.

AAAI Conference on Artificial Intelligence (AAAI) IML Workshop, 2022.

Reinforcement Learning and Decision Making (RLDM), 2022.

SELECTED AWARDS AND HONORS

- **SPIRE Research Grant** (\$3,000) 2025
- **Omicron Delta Kappa Top 10 Freshman** 2024
- **CMSC & ARHU Dean's List** 2023 – 2025
- **UMD President's Scholarship** (\$50,000) 2023
- **NMSC National Merit Scholarship** (\$4,000) 2023
- **Catherine Yang Scholarship** (\$1,000) 2023

TALKS

• Adaptor Grammars and Neural Networks for Feline Lexical Discovery

– The University of Texas at Arlington

July 2024

– University of Maryland, College Park (*adapted*)

Nov 2024

PROFESSIONAL RESPONSIBILITIES

- **Subreviewer**, ACL Rolling Review (ARR) 2025
- **Member**, University Research Advisory Board 2025 – present
- **Vice Chair**, Computer Science Department Council 2025 – present
Appointed by faculty and student body to serve as vice chair; represent 4,200+ CS undergraduates.
- **Senior Member**, FIRE Student Leadership Council 2024 – present
Represented 1000+ peers, ran events & workshops, and reformed class curricula.
- **University Ambassador** 2024 – present
Represented the CS Dept. & CMNS College at admissions events and to official guests.
- **Mentorship**
 - **Office of Undergraduate Research**: Juan Cortés, Kemisola Benson, Vivian Akpala 2025
 - **Technica Mentoring**: Savya Miriyala, Tanya Grover, Jessica Ononye, Nakshatra Hiray 2024
 - **Technica Hackathon**: Volunteer and mentor Oct 2024
 - **MSET Robotics Workshops**: Organizer and curriculum designer 2020 – 2022

SKILLS

- **Languages**: Python, Java, JavaScript/HTML/CSS, R, MATLAB.
- **Libraries/Frameworks**: Huggingface (Datasets, Transformers), NLTK, PyTorch, Selenium, BeautifulSoup.
- **Tools**: Git, Docker, GCP, Google Vertex AI, VS Code.
- **Natural Languages**: English (Native), Gujarati (Native), Spanish (Intermediate), Korean (Beginner).