Nishant Balepur

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RESEARCH SUMMARY

I am a Ph.D. student in computer science at the University of Maryland, College Park, advised by Professors Jordan Boyd-Graber and Rachel Rudinger. I conduct research with the goal of better aligning and evaluating LLMs, with a focus on generating **factual** knowledge, aligning models with **true user needs**, and exposing the **weaknesses** of models and benchmarks. I am extremely grateful to be funded by the NSF GRFP and a Cohere for AI Research Grant.

EDUCATION

- **University of Maryland, College Park (UMD)** — College Park, MD
  Ph.D. Computer Science; GPA: 4.00/4.00 — Aug 2023 - Present
  Advisors: Jordan Boyd-Graber, Rachel Rudinger

- **University of Illinois at Urbana-Champaign (UIUC)** — Urbana, IL
  B.S. Computer Science; B.S. Statistics (Dual Degree); GPA: 4.00/4.00 — Aug 2019 - May 2023
  Collaborators: Kevin Chen-Chuan Chang, Jiawei Han, Hari Sundaram, Diyi Yang

SELECTED WORKS

- A Smart Mnemonic Sounds like Glue Tonic: Mixing LLMs with Student Feedback to Make Mnemonic Learning Stick
  EMNLP 2024
  Nishant Balepur, Matthew Shu, Alexander Hoyle, ..., Shi Feng, Seraphina Goldfarb-Tarrant, Jordan Boyd-Graber
  TL;DR: We use LLM fine-tuning and DPO to generate mnemonics aligned with what users prefer and aid learning

- Artifacts or Abduction: How Do LLMs Answer Multiple-Choice Questions Without the Question?
  ACL 2024, Best Paper Award at MASC-SLL 2024
  Nishant Balepur, Abhilasha Ravichander, Rachel Rudinger
  TL;DR: We discover that LLMs can obtain high accuracy without the question in MCQA, and analyze how

- Expository Text Generation: Imitate, Retrieve, Paraphrase
  EMNLP 2023
  Nishant Balepur, Jie Huang, Kevin Chen-Chuan Chang
  TL;DR: We design a text generation model using iterative query planning and retrieval to generate expository texts

PUBLICATIONS

- When One User's Trash is Another User's Treasure: Defeasible Reasoning for Persona-Tailored Language Models
  Under Review (ACL)
  Nishant Balepur, Vishakh Padmakumar, Fumeng Yang, Shi Feng, Rachel Rudinger, Jordan Boyd-Graber

- Reverse Question Answering: Can an LLM Write a Question so Hard (or Bad) that it Can't Answer?
  Under Review (NAACL)
  Nishant Balepur, Feng Gu, Shi Feng, Abhilasha Ravichander, Jordan Boyd-Graber, Rachel Rudinger

- MoDS: Moderating a Mixture of Document Speakers to Summarize Debatable Queries in Document Collections
  Committed (NAACL)
  Nishant Balepur, Alexa Siu, Nedim Lipka, Franck Dernoncourt, Tong Sun, Jordan Boyd-Graber, Puneet Mathur

- A Smart Mnemonic Sounds like Glue Tonic: Mixing LLMs with Student Feedback to Make Mnemonic Learning Stick
  EMNLP 2024
  Nishant Balepur, Matthew Shu, Alexander Hoyle, ..., Shi Feng, Seraphina Goldfarb-Tarrant, Jordan Boyd-Graber

- KARL: Knowledge-Aware Retrieval and Representations aid Retention and Learning in Students
  EMNLP 2024
  Matthew Shu*, **Nishant Balepur***, Shi Feng*, Jordan Boyd-Graber

- Plausibly Problematic Questions in Multiple-Choice Benchmarks for Commonsense Reasoning
  EMNLP 2024 (Findings)
  Shramay Palta, **Nishant Balepur**, Peter Rankel, Sarah Wiegreffe, Marine Carpuat, Rachel Rudinger

- The Prompt Report: A Systematic Survey of Prompting Techniques
  Under Review (Nature)
  Sander Schulhoff*, Michael Ilie*, **Nishant Balepur**, ..., Shyamal Anadkat, Alexander Hoyle, Phillip Resnik

- Artifacts or Abduction: How Do LLMs Answer Multiple-Choice Questions Without the Question?
  ACL 2024, Best Paper Award at MASC-SLL 2024
  Nishant Balepur, Abhilasha Ravichander, Rachel Rudinger

- It's Not Easy Being Wrong: Large Language Models Struggle with Process of Elimination Reasoning
  ACL 2024 (Findings)
  Nishant Balepur, Shramay Palta, Rachel Rudinger

- Is Your Large Language Model Knowledgeable or a Choices-Only Cheater?
  ACL 2024 (KnowLLM Workshop)
  Nishant Balepur, Rachel Rudinger

- Expository Text Generation: Imitate, Retrieve, Paraphrase
  EMNLP 2023
  Nishant Balepur, Jie Huang, Kevin Chen-Chuan Chang

- Text Fact Transfer
  EMNLP 2023
  Nishant Balepur, Jie Huang, Kevin Chen-Chuan Chang

- DynaMiTE: Discovering Explosive Topic Evolutions with User Guidance
  ACL 2023 (Findings)
  Nishant Balepur*, Shivam Agarwal*, Karthik Ramanan, Susik Yoon, Diyi Yang, Jiawei Han

INDUSTRY RESEARCH EXPERIENCE

Adobe	San Jose, CA
Research Scientist Intern: Multi-LLM Summarization (Paper Committed to NAACL)	May 2024 - Aug 2024
Meta	Menlo Park, CA
Software Engineering Intern	May 2022 - Aug 2022

FELLOWSHIPS AND GRANTS

NSF Graduate Research Fellowship Program (GRFP)	April 2023 - April 2028
Wrote proposal on NLP for information accessibility—$159,000 over 3 Years of Ph.D.	
Cohere for AI Research Grant Program	April 2024
Wrote proposal on LLMs for AI Safety + Education—full access to Cohere models	
Dean's Fellowship	April 2023 - April 2025
Awarded the Dean's Fellowship from UMD for outstanding academic achievement	

AWARDS

MASC-SLL 2024 Best Paper Award	April 2024
Selected for one of three best paper awards for "Artifacts or Abduction" by JHU	
UIUC Computer Science Graduation with Highest Honors	May 2023
Recommended by the UIUC computer science department to graduate with highest honors	
C.W. Gear Outstanding Undergraduate Student	May 2022
Awarded to two seniors that have demonstrated excellence in research and service	
James N. Snyder Memorial Award	May 2021
Awarded to three juniors based on academic merit	

STUDENTS MENTORED

- **Matthew Shu** (B.S. Yale → M.S. Yale), 2023-Present, LLMs for Education
  First-authored and second-authored long conferences papers at EMNLP 2024 (main)

- **Atrey Desai** (B.S. UMD), 2024-Present, Dataset Artifacts

- **Jerry He** (HS Student → B.S. GTech), 2024-Present, Crossword Generation with LLMs

PROFESSIONAL SERVICE

Conference Reviewer	UMD
Reviewer for: *ACL/ARR 2023-Present, COLING 2024, IEEE TASLP 2024	2022-2024
Program Committee: TrustNLP 2024	
Great Reviewer Nomination: April, June, August 2024 ARR	
Outstanding Reviewer: EMNLP 2024	
Visiting Student Day Volunteer	UMD
Volunteer and ambassador for UMD's visiting student day	Mar 2024
Winter Storm LLM Workshop	UMD
Led a 5-day workshop on LLMs for non-CS graduate students	Jan 2023
SIGNLL	UIUC
President of Special Interest Group for Natural Language Learning	Aug 2020 - May 2021