Nishant Balepur

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Website: nbalepur.github.io

Research Interests

I am a Ph.D. student in computer science at the University of Maryland, College Park, working with Professors Jordan Boyd-Graber and Rachel Rudinger. I conduct research at the intersection of natural language processing, information retrieval, and AI safety, where I design methods to help language models reliably and safely convey knowledge to users. I am extremely grateful to be funded by the NSF Graduate Research Fellowship Program.

Education

- **University of Maryland, College Park (UMD)** — College Park, MD
  Ph.D. Computer Science — *Aug 2023 - Present*
  Advisors: Professors 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: Professors Kevin Chen-Chuan Chang, Jiawei Han, Hari Sundaram, Diyi Yang

  Relevant Courses: Data Structures, Algorithms, Natural Language Processing, Data Mining, Social and Information Networks, Formal Models of Computation, Applied Machine Learning, Unsupervised Learning

  Skills: Python, R, SQL, Java, C/C++, PHP, HTML/CSS/JS, OCaml, NLP, ML, IR, Data Science, Web Dev

Publications and Written Work

- Expository Text Generation: Imitate, Retrieve, Paraphrase
  The 2023 Conference on Empirical Methods in Natural Language Processing (EMNLP 2023)
  Nishant Balepur, Jie Huang, Kevin Chen-Chuan Chang
- Text Fact Transfer
  The 2023 Conference on Empirical Methods in Natural Language Processing (EMNLP 2023)
  Nishant Balepur, Jie Huang, Kevin Chen-Chuan Chang
- DynaMiTE: Discovering Explosive Topic Evolutions with User Guidance
  Findings of the Association for Computational Linguistics (ACL 2023)
  Nishant Balepur*, Shivam Agarwal*, Karthik Ramanan, Susik Yoon, Diyi Yang, Jiawei Han
- Mastering the ABCDs of Complex Questions: Answer-Based Claim Decomposition for Self-Evaluating LLMs
  arXiv:2305.14750
  Nishant Balepur, Jie Huang, Samraj Moorjani, Kevin Chen-Chuan Chang, Hari Sundaram
- Aligning Language Models with Factuality and Truthfulness
  Undergraduate Senior Thesis
  Nishant Balepur, Kevin Chen-Chuan Chang

Research Experience

- **Feet Thinking Lab** — UMD
  Professor Jordan Boyd-Graber — *Aug 2023 - Present*
  - Developing personalized language models to accurately predict what information students know
  - Aligning LLMs to generate mnemonic devices through a student-centered RLHF objective
- **RLab** — UMD
  Professor Rachel Rudinger — *Aug 2023 - Present*
  - Studying the capability of LLMs to perform process-of-elimination style reasoning
  - Investigating methods to uncover which strategies LLMs use when answering multiple choice questions
- **Forward Data Lab** — UIUC
  Professor Kevin Chen-Chuan Chang — *Aug 2021 - June 2023*
  - Investigating methods to improve the factuality, truthfulness, and reliability of LLMs
  - Resulted in two EMNLP 2023 main conference papers
- **Data Mining Group** — UIUC
  Professor Jiawei Han — *Aug 2022 - Dec 2022*
  - Developing models for discovering temporal patterns in large, unlabeled document collections
  - Resulted in Findings of ACL 2023 conference paper

Work Experience

- **Meta** — Menlo Park, CA
  Software Engineering Intern — *May 2022 - Aug 2022*
  - Collaborated with machine learning engineers and research scientists on the Facebook Creators Well-being team
  - Fronted a 15% drop in negative interactions across the one billion users on the Facebook platform
- **HiMarley** — Remote
  Data Science Intern — *May 2021 - Aug 2021*
- **State Farm** — Champaign, IL
  Actuarial and Modeling Intern — *Aug 2020 - Dec 2020*
- **John Deere** — Remote
  Software Engineering Intern — *Jun 2020 - Aug 2020*

Honors and Awards

- **NSF Graduate Research Fellowship Program (GRFP)** — April 2023 - April 2028
  Provided 3 Years of Support over a 5 Year Period
- **Dean's Fellowship** — April 2023 - April 2025
  Awarded the Dean's Fellowship from UMD for outstanding academic achievement
- **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