Nishant Balepur

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RESEARCH INTERESTS

I am a first-year Ph.D. student in computer science at the University of Maryland, College Park, working with Professors Jordan Boyd-Graber and Rachel Rudinger. My goal is to conduct research in natural language processing to align LLMs with human values, with a focus on factuality in text generation, human-centered frameworks, and LLM interpretability and safety. 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

PUBLICATIONS AND WRITTEN WORK

- It's Not Easy Being Wrong: Evaluating Process of Elimination Reasoning in Large Language Models
  arXiv:2311.07532
  Nishant Balepur, Shramay Palta, Rachel Rudinger

- 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 with instruction tuning and 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
  - Uncovering the internal decision-making processes LLMs execute when answering questions
  - Investigating artifacts in multiple-choice questions to examine the reliability of LLM benchmarks

- **Forward Data Lab** — UIUC
  Professor Kevin Chen-Chuan Chang — *Aug 2021 - June 2023*
  - Designed tasks and techniques to improve the factuality, truthfulness, and reliability of LLMs
  - Implemented retrieval-augmented LLMs, factuality metrics, and self-evaluation techniques to test hypotheses
  - 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