Alexander Braverman

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EDUCATION

Cornell University, College of Engineering Ithaca, NY
Bachelor of Science in Computer Science, Minor in Operations Research Expected May 2029
Relevant Courses: Data Structures, Linear Algebra, Introduction to Operations Research

EXPERIENCE

UCLA Artificial General Intelligence Lab December 2024 - Present
Natural Language Processing Researcher, First Author

- Developed Test-Time A* Search (TTA*), a training-free, resource-efficient framework for Large Language Models (LLMs), casting LLM reasoning as a goal-directed search over partial solution trees.
- Applied TTA* to Qwen and LLaMA models, improving GSM8K accuracy by 12–13%, MATH500 by 14–27%, AIME by 3–7 points, and MATH401 by 11–15 points.
- Mentored by Prof. Quanquan Gu of the Department of Computer Science.
- Preliminary results submitted to NeurIPS 2025 workshops; full paper to be submitted to ICLR 2026.

UCLA Artificial General Intelligence Lab April 2023 - December 2024
Natural Language Processing Researcher, First Author

- Developed explanatory prompting methodology for LLMs, providing informal logical descriptions of algorithms to reduce hallucinations; decreased hallucination rates from 44.8% to 1.8% on graph connectivity problems.
- Evaluated method on Flight Connectivity dataset; verified theoretical lower bounds of hallucination in calibrated LLMs
- Mentored by Prof. Quanquan Gu of the Department of Computer Science.
- Paper published and presented in NeurIPS Statistical Frontiers in LLMs and Foundation Models workshop.

University of Maryland FROOT Lab April 2022 - September 2023
Computer Networking Researcher, First Author

- Developed a Bloom Filter–based tracking methodology for live key-value migration in distributed stores, minimizing query losses and reducing packet loss from 11.8% to 3.7% on 100 GB of data.
- Designed and prototyped the system on a Redis cluster using C++; the approach enabled fast query forwarding without double-checking source servers, improving migration efficiency.
- Mentored by Prof. Zaoxing (Alan) Liu of the Department of Computer Science.
- Paper published in ACM SIGMETRICS Performance Evaluation Review.

NeurIPS Safe Generative AI Workshop November 2024
Workshop Reviewer

- Invited to peer review 4 academic papers in the area of safe and responsible generative AI.

NeurIPS Multi-Turn Interactions in Large Language Models Workshop September 2025
Workshop Reviewer

- Invited to peer review 4 academic papers in the area of multi-turn interactions in Large Language Models.

PUBLICATIONS

- Braverman, A. and Liu, Z. 2023. Toward Fast Query Serving in Key-Value Store Migration with Approximate Telemetry. SIGMETRICS Performance Evaluation Review. 51, 2 (Sept. 2023), 91–93. https://doi.org/10.1145/3626570.3626604
- Braverman, A., Zhang, W., & Gu, Q. (2024). Mitigating hallucination in large language models with explanatory prompting. In NeurIPS 2024 Workshop on Statistical Foundations of LLMs and Foundation Models. https://openreview.net/pdf/12b1334745e10059579911fa26e88edbf8f4ff59.pdf

PERSONAL PROJECTS

Smart Waste Classifier August 2025

- Designed and deployed an end-to-end image classification pipeline using transfer learning; fine-tuned a pretrained CNN on TrashNet dataset to classify six waste categories with 85%+ accuracy.
- Built a Streamlit front-end connected to a PyTorch inference backend, and integrated SQLAlchemy with SQLite to persist images, predictions, confidence scores, and timestamps.

TECHNICAL SKILLS

- **Languages:** Python (NumPy, pandas, scikit-learn, PyTorch, TensorFlow), Java, C/C++, Bash
- **Tools:** HuggingFace (Transformers, Datasets), Git, GitHub, Overleaf, OpenAI API
- **Databases:** MySQL, PostgreSQL, SQLite (SQL); MongoDB, Redis (NoSQL)