

Alexander Martin

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EDUCATION

Johns Hopkins University

Ph.D. in Computer Science

Advisor: Dr. Benjamin Van Durme

Baltimore, Maryland

Expected 2028

University of Rochester

B.S. in Computer Science; Highest Honors in Research

Advisor: Dr. Aaron Steven White, Dr. Jiebo Luo

Thesis: Human-Centric Event Representations in Documents and Videos

Rochester, New York

May 2024

SELECT HONORS & AWARDS

National Science Foundation, **Graduate Research Fellowship** 2024 – 2029

Computing Research Association, **Outstanding Undergraduate Research Award (HM)** 2024

University of Rochester, **Charles L. Newton Prize** 2024

INDUSTRY RESEARCH

Amazon, Fire TV

2025 – Present

Researcher; AI2AI Award

Researched topics in representations for efficient multimodal retrieval and generation.

RESEARCH EXPERIENCE

Human Language Technology Center of Excellence

2024 – Present

Ph.D. Researcher; Advised by Dr. Benjamin Van Durme

Researched topics in multimodal content generation and reasoning using documents and videos.

Human Language Technology Center of Excellence

Summer 2024

Researcher Intern; Advised by Dr. Benjamin Van Durme

Researched extracting information about events from videos and aligned text and video retrieval.

Formal And Computational Semantics Lab

2022 – 2024

Undergraduate Researcher; Advised by Dr. Aaron Steven White

Researched extracting and summarizing information about events from large unstructured text.

Visual Intelligence & Social Multimedia Analytics Lab

2022 – 2024

Undergraduate Researcher; Advised by Dr. Jiebo Luo

Researched methods for image generation, image-to-image translation, and video understanding.

Environmental Protection Agency

Summer 2022 – Fall 2022

Research Intern; Advised by Dr. Andrea Kirk

Developed methods for relative importance analysis to measure the effects of PFAS exposure on humans and their health, including cancer risk and bone mineral density.

Rochester Human Computer Interaction Lab

2022 – 2024

Research Assistant; Advised by Dr. Ehsan Hoque

Created synthetic datasets to improve performance of hand pose estimation models for diagnosing Parkinson's Disease in virtual health appointments.

PUBLICATIONS

Representative Work: Multimodal RAG, Multimodal Reasoning, Video Understanding

- [1] A. Martin, et al. “WikiVideo: Article Generation from Multiple Videos” ([ArXiv](#) 2025)
- [2] A. Martin, et al. “Seeing Through the MiRAGE: Evaluating Multimodal Retrieval Augmented Generation” ([ArXiv](#) 2025)
- [3] A. Reddy*, A. Martin*, et al. “Video-ColBERT: Contextualized Late Interaction for Text-to-Video Retrieval” ([CVPR](#) 2025)

All Others:

- [4] R. Kriz et al. (incl **A. Martin**) “MultiVENT 2.0: A Massive Multilingual Benchmark for Event-Centric Video Retrieval” (CVPR 2025)
- [5] S. Samuel et al. (incl **A. Martin**) “*MMMORRF: Multimodal Multilingual Modularized Reciprocal Rank Fusion*” (SIGIR 2025)
- [6] D. DeGenaro et al. (incl **A. Martin**) “*FORTIFY: Generative Model Fine-tunning with ORPO for Retrieval Expansion of InFormal Noisy Text*” (ACL Workshop 2025)
- [7] W. Walden, P. Kuchmiichuk, **A. Martin**, et al. “*Cross-Document Event-Keyed Summarization*” (ACL Workshop 2025)
- [8] K. Sanders et al. (incl **A. Martin**) “*Grounding Partially-Described Events in Multimodal Data*” (EMNLP 2024)
- [9] W. Gantt, **A. Martin**, et al. “*Event-Keyed Summarization*” (EMNLP 24)
- [10] S. Vashishtha, **A. Martin**, et al. “*FAMuS: Frames Across Multiple Sources*” (NAACL 2024)
- [11] M. Hasan et al. (incl **A. Martin**) “*Hi5: 2D Hand Pose Estimation with Zero Human Annotation*” (ArXiv 2024)
- [12] **A. Martin**, H. Zheng, J. An, J. Luo “*Jurassic World Remake: Bringing Ancient Fossils Back to Life via Zero-Shot Long Image-to-Image Translation*” (MM 2024)
- [13] S. Barham et al. (incl **A. Martin**) “*MegaWika: Millions of reports and their sources across 50 diverse languages*” (ArXiv 2023)
- [14] A.B. Kirk, A. DeStefano, **A. Martin**, et al. “*A New Interpretation of Relative Importance Analysis of Per and Polyfluorinated Alkyl Substances (PFAS) Exposure on Bone Mineral Density*” (IJERPH 2023)

TALKS

Knowledge Intensive Multimodal Retrieval Augmented Generation [slides tbd] University of Maryland, Baltimore County; PPR Seminar	November 2025 Seminar
Discovering and Understanding Events in Videos in Real Time [slides] MacroXStudio (<u>macrox.ai</u>)	October 2025 Talk
On Demand Article Generation of Events in Real Time [slides] University of Rochester, Department of Computer Science	April 2025 Seminar
MARE: Automatic Modality-Agnostic Report Evaluation [slides] Eval4Rag Workshop; European Conference on Information Retrieval	April 2025 Oral
Understanding Events in Multimodal Data Through Question Answering [slides] 4 th Workshop on Processing and Evaluating Event Representations	April 2025 Talk
FAMuS: Frames Across Multiple Sources [slides] 3 rd Workshop on Processing and Evaluating Event Representations	April 2024 Talk
Jurassic World Remake [slides] Main Conference; ACM Multimedia	October 2023 Ora

SERVICE

MAGMaR: Workshop on Multimodal Augmented Generation via Multimodal Retrieval

Organizing Committee; *ACL* 2026
Program Committee; *ACL* 2025

Mentorship

Charles Weng (Johns Hopkins University, B.S./M.S. 2025; **Now:** TikTok Research Scientist)
Dengjia Zhang (**current:** Johns Hopkins University, M.S. 2026)
Hanxiang Qin (**current:** Johns Hopkins University, M.S. 2026)
Katherine Guerrerio (**current:** Johns Hopkins University, B.S. 2027)

Community Service

North American Computational Linguistics Open Competition (NACLO)	2024 – Present
Competition Organizer	
STEM Initiative	2021 – 2024
Education Mentor	
University of Rochester: Residential Life	2021 – 2024
Resident Advisor	

Teaching

Introduction to Artificial Intelligence (University of Rochester)	Spring 2023
Data Structures and Algorithms (University of Rochester)	Spring 2022, Fall 2022
Introduction to Computer Science (University of Rochester)	Fall 2021

OTHER HONORS & AWARDS

University of Rochester, Senior Research Award	2024
University of Rochester, Research Presentation Grant (x2)	2023, 2024
University of Rochester, Dean's Award in Engineering and Mathematics (x2)	2023, 2024
University of Rochester, River Campus Libraries Dataset Grant	2023
University of Rochester, Residential Life Best Program of the Year	2023
University of Rochester, Make It Happen Grant	2022