Alexander Martin

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EDUCATION

Johns Hopkins University — **Baltimore, Maryland**
Ph.D. in Computer Science; Advsior: Dr. Benjamin Van Durme — Expected May 2029

University of Rochester — **Rochester, New York**
B.S. in Computer Science; Highest Honors in Research — May 2024

RESEARCH

Human Language Technology Center of Excellence — ***Johns Hopkins University***
Research Intern; Advised by Dr. Benjamin Van Durme — *May 2024 – August 2024*

- Researched extracting information about events from videos and aligned text.

Formal And Computational Semantics (FACTS) Lab — ***University of Rochester***
Undergraduate Researcher; Advised by Dr. Aaron Steven White — *May 2022 – Present*

- Created a variety of corpora for machine learning models for document, mutli-document, and cross-document level tasks on event argument extraction and summarization of events.
- Built transformer-based models and finetuned Large Language Models (LLMs) for those tasks.
- Formulated new evaluation metrics for cross-document argument extraction.

Visual Intelligence & Social Multimedia Analytics (VIStA) Lab — ***University of Rochester***
Undergraduate Researcher; Advised by Dr. Jiebo Luo — *August 2022 – Present*

- Created a dataset for long image-to-image translation, for translating fossils into living animals.
- Designed methodologies for working with Multimodal Large Language Models (LMMs), Large Video Understanding Models, Stable Diffusion, and Generative Adversarial Networks.
- Developed contrastive pretraining objectives and unsupervised generative models for media.

PUBLICATIONS & TALKS

W. Gantt, **A. Martin**, P. Kuchmiichuk, A.S. White "Event-Keyed Summarization" (ArXiv, 2024)

S. Vashishtha, **A. Martin**, W. Gantt, B. Van Durme, A.S. White "FAMuS: Frames Across Multiple Sources" (NAACL, 2024)

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, Oral Presentation)

S. Barham, et al. (incl **A. Martin**) "MegaWika: Millions of reports and their sources across 50 diverse languages" (ArXiv, 2023)

A. Kirk, A. DeStafano, **A. Martin**, K. Kirk, C. Martin "A New Interpretation of Relative Importance on An Analysis of Per and Polyfluorinated Alkyl Substances (PFAS) Exposures on Bone Mineral Density" (IJERPH 2023)

Talk: PEER Workshop 2024: *FAMuS: Frames Across Multiple Sources* (March 2024)

Talk: ACM Multimedia 2023: *Jurassic World Remake* (October 2023)

HONORS, AWARDS, & GRANTS

National Science Foundation, **Graduate Research Fellowship** — 2024 – 2029
University of Rochester, **Charles L. Newton Prize ($2,010)** — 2024
University of Rochester, **Senior Research Award** — 2024
University of Rochester, **Research Presentation Grant (x2) ($3,300)** — 2023, 2024
University of Rochester, **Dean's Award in Engineering and Mathematics (x2)** — 2023, 2024
CRA, **Outstanding Undergraduate Research Award Honorable Mention** — 2024
University of Rochester, **River Campus Libraries Data Set Grant ($850)** — 2023
University of Rochester, **Make It Happen Grant ($500)** — 2022

SKILLS

Programming Languages: Python, Java, C++, MATLAB **Familiar:** C, SQL, JavaScript, R
Tools/Frameworks: PyTorch, Amazon Mechanical Turk, Docker, AWS, LaTeX, Git, Overleaf