

Tianze (Etha) Hua

CONTACT INFORMATION	257 Thayer Street Providence, RI 02906	tianze_hua@brown.edu ethahtz.github.io (617)-460-0626
EDUCATION	Brown University , Providence, RI Ph.D. in Computer Science	Sept 2025 - now (expected May 2029)
	Brown University , Providence, RI M.S. in Computer Science	Sept 2023 - May 2025
	<ul style="list-style-type: none">Relevant Coursework: <i>Computational Linguistics, Deep Learning, Topics in Self-Supervised Learning, Interpretability of Language Models, Systems for Machine Learning</i>	
	Tufts University , Medford, MA B.S. in Computer Science and Philosophy, GPA: 3.97 / 4.00	Sept 2019 - May 2023
	<ul style="list-style-type: none">Relevant Coursework: <i>Introduction to Machine Learning and Data Mining, Linear Algebra, Algorithms, Computation Theory, Introduction to Linguistics, Formal Logic, Epistemology</i>Honors: <i>summa cum laude; Helen Morris Cartwright Prize in Philosophy</i>	
RESEARCH EXPERIENCE	LUNAR Lab, Brown University , Providence, RI <i>Advised by Prof. Ellie Pavlick</i>	Sept 2023 - present
	<ul style="list-style-type: none">Investigated how vision-language models resolve conflicts between visual and textual inputsStudying the effect of overlapping task-specific subnetworks on task interference during multi-tasking in pretrained transformer language modelsDesigned a synthetic environment to study multilingual representation alignment and cross-lingual transfer in multilingual language models	
	Levin Lab, Tufts University , Medford, MA <i>Advised by Gizem Gumuskaya</i>	May 2022 - May 2023
	<ul style="list-style-type: none">Formalized a computational model of staged biobot self-assembly based on rotatable Wang tilesDesigned and implemented a shape compiler, which analyzes input target shapes and computes specifications of constituent biobots with staged choreography	
PUBLICATIONS & PREPRINTS	<i>How Do Vision-Language Models Process Conflicting Information Across Modalities?</i> Tianze Hua* , Tian Yun*, and Ellie Pavlick ArXiv Preprint	
	<i>mOthello: When Do Cross-Lingual Representation Alignment and Cross-Lingual Transfer Emerge in Multilingual Models?</i> Tianze Hua* , Tian Yun*, and Ellie Pavlick Findings of NAACL 2024	
WORKING PAPERS	<i>How Modality Words Guide Reference: A Mechanistic Study in Vision-Language Models</i> Tianze Hua , Tian Yun, and Ellie Pavlick	
	<i>Effects of Task-Specific Subnetwork Overlap on Task Interference in Multitasking Language Models</i> Tianze Hua , Jacob Russin, and Ellie Pavlick	

PROJECTS	NASA Image Alt-text Generation for the Visually Impaired , Providence, RI <i>Advised by Thomas Sgouros</i>	Sept 2023 - Dec 2023
	<ul style="list-style-type: none"> Designed an InstructBLIP-powered alternative-text generator to improve accessibility for visually impaired users, focusing on astronomical images released by the Chandra Observatory Developed specialized evaluation techniques to assess the accuracy and quality of alternative-text in astronomical contexts 	
TEACHING EXPERIENCE	Brown University , Providence, RI <i>Teaching Assistant</i> CSCI 1460: Computational Linguistics (Fall 2024) CSCI 1260: Compilers and Program Analysis (Fall 2023)	Sept 2023 - present
TECHNICAL SKILLS	<ul style="list-style-type: none"> Deep Learning and Machine Learning: PyTorch, Transformers, SciPy, NNsight Natural Language Processing: SpaCy Programming Languages: Python, C++, C, OCaml 	