

JIAQI WU

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EDUCATION

University of Michigan, Ann Arbor

Ann Arbor, MI, USA

Master of Science in Information, Thesis Option

Aug 2022 – May 2024 (Expected)

Cumulative GPA: 4.00/4.00

Relevant Courses: Natural Language Processing (A), Information Retrieval (A+), Interaction Design (A)

Fudan University

Shanghai, China

Bachelor of Science, Information Security (under computer science)

Sept 2018 – Jun 2022

Last Two Year GPA: 3.54/4.00

Relevant Courses: Algorithm Design & Analysis (A), Introduction to Computer System I/II (A-/A)

Selected Awards: Outstanding Student (2019–2020) Outstanding Undergraduate Student Scholarship (2020, 2021)

WORKING PAPERS & PUBLICATIONS

Jiaqi Wu et al. [Preprint] viz2viz: Prompt-driven stylized visualization generation using a diffusion model.

Jiaqi Wu et al. Characterizing and Understanding the Development of Social Computing through DBLP: A Data-Driven Analysis. Journal of Social Computing, vol. 3, no. 4, pp. 287-302

SELECT RESEARCH EXPERIENCE

University of Michigan, Ann Arbor Advisor: Prof. Eytan Adar

Oct 2023–Present

Mask Guided Attention Semantic Guidance for Text-to-Image Diffusion Models

- **Research question:** How can we enable soft conditions on multiple object layouts in stable diffusion?
- Built a novel algorithm upon [Attend and Excite](#) (Attention-based Semantic Guidance for Diffusion Models)
- Deployed a new loss function, directly regulating attention maps by input masks at the inference stage

University of Michigan, Ann Arbor Advisor: Prof. Eytan Adar

May 2023–Present

Augmenting Generative Procedural Art with Generative Model

- **Research question:** How can feature patterns from AI output help create abstract generative procedural art?
- Devised a novel method for augmenting generative procedural art where artist can make full use of both the programmability of code and stylization ability of generative AI
- Built a *p5.js* library supporting diverse functions for creating procedural arts through a generative model, showcasing various art examples

University of Michigan, Ann Arbor Advisor: Prof. Eytan Adar

Sept 2022–Oct 2023

Diffusion Model in Data Visualization

- **Research question:** How can generative models help create processes with high precision requirements?
- Identified a design space and taxonomy of stylized visualization.
- Designed and developed *viz2viz*, a general recipe with specific workflows to support creating stylized visualization with pipelines implemented in *PyTorch*.
- Completed a research preprint as first author.

Tsinghua University • Fudan University Advisor: Prof. Yang Chen

Jan 2022–Oct 2022

Social Computing Research Analysis

- **Research question:** How do we explore social computing research using cross-platform publication data?
- Designed and implemented a systematic workflow for publication dataset generation
- Performed a research bibliometric analysis on social computing with literature data from the DBLP platform

- Deployed graph network analysis , information visualization and structural hole theory publication data
- Published a research paper to an IEEE Journal, *Journal of Social Computing (JSC)*, as first author

Hong Kong University of Science and Technology

Advisors: Prof. Pan Hui, Prof. Lik-Hang Lee

Jul 2021–Feb 2022

Shape Pronto: AR effect prototypes that suit the shape of real objects

- **Research question:** How can computational methods aid in creating shape-based art effects?
- Defined concept for a creative AR prototype for shape-based art effects and proposed its working principle
- Implemented systematic classification for AR prototypes and utilized *Reality Composer* and *Adobe Aero* to improvise multiple prototypes for research
- Conducted a user study to evaluate and optimize the design space to attain an HCI-based systematic workflow

SELECT PROJECT EXPERIENCE

Visual Text Analyzer: Creative image generation

University of Michigan, 2023

Developed a customized GPT enabling creative image generation from complex input text paragraph

AR application design for artists and designers

University of Michigan, 2023

Designed two AR applications to improve the work of artists and designers, built video prototypes with *Lens Studio*

Stylized Brush

University of Michigan, 2023

Developed a stylized brush application to allow painting with brush stylization using *Python p5* and *DreamStudio Stable Diffusion (SD) API*

Natural Language Processing: Simple Text Inpainting System

University of Michigan, 2023

Proposed the idea of text inpainting and created the dataset, simple implementation, and evaluation

Information Retrieval: Small Search Engine on Social Computing Publication.

University of Michigan, 2022

Used *PyTerrier* to rank models to create a search engine for high-quality social computing publications

Statistics and Data Analysis: Dating App User Profile Analysis

University of Michigan, 2022

Leveraged R language to perform statistical analysis on open-source user profile data from *Kaggle*

INTERNSHIP EXPERIENCE

Research and Engineering Intern, Tsinghua University

Dec 2020–Jun 2022

Big Data and Social System Development

- Used *JavaScript*, *Python*, and *Node.js* to develop and employ multiple functionalities (file downloading, organization management, *etc.*) of a mobile app for social activity data processing
- Designed the operation framework for the connection and transportation between the front-end and back-end system and optimized compatibility and data transmission problems to alleviate data overloading, synchronous access, and inefficient compression
- Developed a public system with a user-friendly social management tool for social data analytics

SKILLS & CERTIFICATIONS

Certifications: Machine Learning Specialization Certificate (Stanford Online)

Computing: *Python*, *PyTorch*, *JavaScript*, *SQL*, *Django*, *PyTerrier*, *R*, *C/C++*, *ARKit*, *JEB/Jadx*, *Lens Studio*

Languages: Chinese (Native), English (Advanced; TOEFL iBT: 112 (speaking: 28), GRE: V-159 + Q-169 + AW-4.0)

Art & Design: Sketching, painting, video editing, storyboarding, photography, *Nuke*, *Final Cut Pro*, *Premiere*