

# YUTONG XIE

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📍 [School of Information, University of Michigan](#),  
Ann Arbor, MI 48109, USA

## EDUCATION

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**University of Michigan**, Ann Arbor, MI, USA *Sep. 2020 – Present*  
*Ph.D. Candidate in Information Science*

- Advised by [Prof. Qiaozhu Mei](#) in the [Foreseer Research Group](#).

**Shanghai Jiao Tong University**, Shanghai, China *Sep. 2016 – Jun. 2020*  
*B.Eng. in Computer Science (Zhiyuan Honors Degree)*

- Member of [ACM Class](#), [Zhiyuan Honors Program](#).
- Advised by [Prof. Yong Yu](#) and [Prof. Weinan Zhang](#) in the [Apex Lab](#).

## RESEARCH INTERESTS

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I have a general research interest in exploring the potential of AI to support and drive innovation, with a specific focus on its applications in both scientific research (*AI for science*) and creative processes (*AI for creativity*). My research encompasses three key aspects: identifying the innovation space (“What to innovate”), devising computational methodologies for innovative breakthroughs (“How to innovate”), and establishing robust criteria for evaluating these innovations (“How to evaluate”).

A significant part of my work involves examining the synergistic relationship between AI and human intelligence in the innovation landscape. Additionally, I am keenly interested in the application and enhancement of *large language models*, particularly in the context of fostering effective human-AI collaboration for innovative endeavors.

## RESEARCH EXPERIENCE

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**Office of Budget and Planning**, University of Michigan *Sep. 2023 – Present*  
*Graduate Student Research Assistant*, mentored by [Dr. Annette Sieg](#).

**Niantic, Inc.**, Sunnyvale, CA, USA *May. 2023 – Aug. 2023*  
*Machine Learning Scientist Intern*, mentored by Ying Sun, [Hugh Williams](#), and [Yunpeng Liu](#).

**Niantic, Inc.**, Sunnyvale, CA, USA *May. 2022 – Aug. 2022*  
*Machine Learning Scientist Intern*, mentored by [Dr. Roger Luo](#) and [Amrita Veerabagu](#).

**ByteDance AI Lab**, Shanghai, China *Feb. 2020 – Jan. 2021*  
*Research Intern*, mentored by [Dr. Hao Zhou](#) and [Dr. Lei Li](#).

**Foreseer Research Group**, University of Michigan *Jun. 2019 – Dec. 2019*  
*Visiting Scholar*, advised by [Jiaqi Ma](#) and [Prof. Qiaozhu Mei](#).

**Apex Data & Knowledge Management Lab**, Shanghai Jiao Tong University *Jun. 2018 – Jun. 2020*  
*Research Assistant*, advised by [Prof. Weinan Zhang](#) and [Prof. Yong Yu](#).

## PUBLICATIONS

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### **A Turing test of whether AI chatbots are behaviorally similar to humans**

Qiaozhu Mei, **Yutong Xie**, Walter Yuan, Matthew O. Jackson.

Proceedings of the National Academy of Sciences of the United States of America (PNAS), 2024.

### **A Prompt Log Analysis of Text-to-Image Generation Systems**

**Yutong Xie\***, Zhaoying Pan\*, Jinge Ma\*, Luo Jie, Qiaozhu Mei.

The ACM Web Conference (WWW), 2023 (The Creative Web Track).

### **How Much Space Has Been Explored? Measuring the Chemical Space Covered by Databases and Machine-Generated Molecules**

**Yutong Xie**, Ziqiao Xu, Jiaqi Ma, Qiaozhu Mei.

International Conference on Learning Representations (ICLR), 2023.

### **How Much of the Chemical Space Has Been Explored? Selecting the Right Exploration Measure for Drug Discovery**

**Yutong Xie**, Ziqiao Xu, Jiaqi Ma, Qiaozhu Mei.

International Conference on Machine Learning (ICML) AI for Science Workshop, 2022.

### **Multi-View Graph Representation for Programming Language Processing: An Investigation into Algorithm Detection**

Ting Long\*, **Yutong Xie\***, Xianyu Chen, Weinan Zhang, Qinxiang Cao, Yong Yu.

AAAI Conference on Artificial Intelligence (AAAI), 2022 (acceptance rate %15).

### **MARS: Markov Molecular Sampling for Multi-objective Drug Discovery**

**Yutong Xie**, Chence Shi, Hao Zhou, Yuwei Yang, Weinan Zhang, Yong Yu, Lei Li.

International Conference on Learning Representations (ICLR), 2021 (**spotlight, top 5%**).

### **Visual Rhythm Prediction with Feature-Aligned Network**

**Yutong Xie**, Haiyang Wang, Yan Hao, Zihao Xu.

IAPR International Conference on Machine Vision Applications Conference (MVA), 2019.

\* = equal contribution

## PROFESSIONAL SERVICES

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### **Workshop Organization**

- **GNNs for Recommendation and Search (GRoS) Workshop** at ACM RecSys '21 2021

### **PC Member and Peer Reviewer**

- International Conference on Machine Learning (ICML) 2022-2024
- Conference on Neural Information Processing Systems (NeurIPS) 2022-2023
- ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD) 2023
- ACM Web Conference (WWW) 2023
- AAAI Conference on Artificial Intelligence (AAAI) 2023
- Graph Learning Benchmarks (GLB) Workshop at KDD '23 2023
- Machine Learning on Graphs (MLOG) Workshop at WWW '22 2022

## RESEARCH MENTORSHIP

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**Lin Shi**, M.S., University of Michigan  
**Yijun Pan**, B.S., UM-SJTU Joint Institute  
**Zhuang Ma**, M.Eng., University of Michigan  
**Yiyao Liu**, B.S., University of Michigan  
**Xiyuan Wang**, M.S., University of Michigan  
**Ting Wei Li**, RA, University of Michigan  
**Ruoyi Gao**, M.S., University of Michigan  
**Qijia Liu**, B.S., UM-SJTU Joint Institute  
**Yingpei Mo**, B.Eng., Shanghai Jiao Tong University  
**Jinge Ma**, M.S., University of Michigan → Ph.D., Purdue University  
**Zhaoying Pan**, M.S., University of Michigan → Ph.D., Purdue University  
**Yuan Xu**, B.Eng., UM-SJTU Joint Institute → M.S., Carnegie Mellon University

## TEACHING EXPERIENCE

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**SI 630: Natural Language Processing: Algorithms and People**, UofM Winter 2023  
Graduate student instructor (GSI), co-worked with **Prof. David Jurgens**.

**SIADS 543: Unsupervised Learning**, University of Michigan Fall 2021, Winter 2022  
Graduate student instructor (GSI), co-worked with **Prof. Kevyn Collins-Thompson**.

**SIADS 542: Supervised Learning**, University of Michigan Fall 2021, Winter 2022  
Graduate student instructor (GSI), co-worked with **Prof. Kevyn Collins-Thompson**.

**Dive Into Deep Learning (PyTorch)**, Boyu AI 2020  
Voluntary Instructional Team Member









**CS420: Machine Learning**, Shanghai Jiao Tong University Spring 2019  
Teaching assistant (TA), co-worked with **Prof. Weinan Zhang**.

**CS120: Introduction to Computer Science**, Shanghai Jiao Tong University Fall 2018  
Teaching assistant (TA), co-worked with **Prof. Hongtao Lu**.

**CS151: C++ Programming (A)**, Shanghai Jiao Tong University Fall 2017  
Teaching assistant (TA), co-worked with **Prof. Huiyu Weng**.

## INVITED TALKS

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- **Technical Sharing Report on ChatGPT**, MobLab Kids, 2023.
- **How Much Space Has Been Explored? Measuring the Chemical Space Covered by Databases and Machine-Generated Molecules**, D. E. Shaw Research Symposium, 2023. 
- **How Much Space Has Been Explored? Measuring the Chemical Space Covered by Databases and Machine-Generated Molecules**, AI Time PhD Forum, 2023.  
- **The Magics Behind Text-to-Image Generation**, SI 670 Applied Machine Learning (guest lecture), University of Michigan, 2022. 
- **MARS: Markov Molecular Sampling for Multi-objective Drug Discovery**, AI Time PhD Forum, 2021.  
- **A Brief Introduction to Graph Machine Learning Methods in Drug Discovery**, ACM Class Student Academic Festival, Shanghai Jiao Tong University, 2019.  

## HONORS & AWARDS

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<b>Barbour Scholarship</b> (full tuition and stipend for one year), University of Michigan	2024
<b>Graduate and Postdoctoral Women's Fellowship, D. E. Shaw Research</b>	2023
<b>Outstanding Graduate Student Instructor Award Nominee</b> , School of Information, UofM	2022
<b>Ph.D. Pre-candidacy Paper Passed with Distinction</b> , University of Michigan	2021
<b>Doctoral Student Freshman Fellowship</b> , University of Michigan	2020
<b>Best Innovation Award</b> , Bytedance AI Lab Computational Intelligence Tech Day	2020
<b>Outstanding Graduate</b> , Shanghai Jiao Tong University	2020
<b>Zhiyuan Honors Degree</b> , Shanghai Jiao Tong University	2020
<b>Leo KoGuan Scholarship</b> , Shanghai Jiao Tong University	2018–2019
<b>Academic Excellence Scholarship</b> , Shanghai Jiao Tong University	2017–2018
<b>Zhiyuan Honorary Scholarship</b> , Shanghai Jiao Tong University	2016–2018
<b>Huawei Scholarship</b> , Shanghai Jiao Tong University	2017
<b>Second Prize, ACM-ICPC 2016, Nha Trang, Vietnam</b>	2016
<b>Best Female Team and Bronze Medal, ACM-ICPC 2016, Beijing, China</b>	2016
<b>Best Female Team and Silver Medal, CCPC 2016, Hefei, China</b>	2016
<b>Bronze Medal, National Olympiad in Informatics (NOI), Hangzhou, China</b>	2015
<b>Bronze Medal, Asia-Pacific Informatics Olympiad (APIO), Beijing, China</b>	2015
<b>First Prize, National Olympiad in Informatics in Provinces (NOIP), Chongqing, China</b>	2014