YING SHEN

ying22@illinois.edu | https://yingshen-ys.github.io

RESEARCH INTERESTS

Multimodal Machine Learning, Natural Language Processing, Computer Vision, and Generative AI.

EDUCATION

UIUC, Department of Computer Science — Champaign, IL
Ph.D. in Computer Science — Aug 2024 – Present

Virginia Tech, Department of Computer Science — Blacksburg, VA
Ph.D. in Computer Science (Transferred), GPA: 3.9/4.0 — Aug 2021 – May 2024

Carnegie Mellon University, School of Computer Science — Pittsburgh, PA
M.S. in Intelligent Information Systems, GPA: 3.8/4.0 — Sept 2017 – Dec 2018

Fudan University, School of Software — Shanghai, China
B.E. in Software Engineering, GPA: 3.68/4.0, Rank: 3/86, National Scholarship (top 1%) — Sept 2013 - July 2017

PUBLICATIONS (* indicates equal contribution)

- **Kaleido Diffusion: Improving Conditional Diffusion Models with Autoregressive Latent Modeling (Link)**
  Jiatao Gu*, **Ying Shen***, Shuangfei Zhai, Yizhe Zhang, Navdeep Jaitly, Joshua M. Susskind (in submission)
- **Many-to-many Image Generation with Auto-regressive Diffusion Models (Link)**
  Ying Shen, Yizhe Zhang, Shuangfei Zhai, Lifu Huang, Joshua Susskind, Jiatao Gu (in submission)
- **InternalInspector I^2: Robust Confidence Estimation in LLMs through Internal States (Link)**
  Mohammad Beigi, **Ying Shen**, Runing Yang, Zihao Lin, Qifan Wang, Ankith Mohan, Jianfeng He, Ming Jin, Chang-Tien Lu, Lifu Huang (in submission)
- **Learning by Asking for Embodied Visual Navigation and Task Completion (Link)**
  Ying Shen and Ismini Lourentzou (WACV 2025)
- **Multimodal Instruction Tuning with Conditional Mixture of LoRA (Link)**
  Ying Shen, Zhiyang Xu, Qifan Wang, Yu Cheng, Wenpeng Yin, Lifu Huang (ACL 2024)
- **Vision-Flan: Scaling Human-Labeled Tasks in Visual Instruction Tuning (Link)**
  Zhiyang Xu, Chao Feng, Rulin Shao, Trevor Ashby, **Ying Shen**, Di Jin, Yu Cheng, Qifan Wang, Lifu Huang (ACL 2024)
- **X-EVAL: Generalizable Multi-aspect Text Evaluation via Augmented Instruction Tuning with Auxiliary Evaluation Aspects (Link)**
  Minqian Liu, **Ying Shen**, Zhiyang Xu, Yixin Cao, Eunah Cho, Vaibhav Kumar, Reza Ghanadan, Lifu Huang (NAACL 2024)
- **MULTISCRIPT: Multimodal Script Learning for Supporting Open Domain Everyday Tasks (Link)**
  Jingyuan Qi, Minqian Liu, **Ying Shen**, Zhiyang Xu, Lifu Huang (AAAI 2024)
- **Multi-Instruct: Improving Multi-Modal Zero-Shot Learning via Instruction Tuning (Link)**
  Zhiyang Xu*, **Ying Shen***, and Lifu Huang (ACL 2023) 🏆**Outstanding Paper Award at ACL'23**
- **The Art of Socratic Questioning: Recursive Thinking with Lange Language Models (Link)**
  Jingyuan Qi*, Zhiyang Xu*, **Ying Shen**, Minqian Liu, Di Jin, Qifan Wang, and Lifu Huang (EMNLP 2023)
- **Efficient Low-rank Multimodal Fusion with Modality-Specific Factors (Link)**
  Zhun Liu*, **Ying Shen***, Varun Lakshminarasimhan, Paul Pu Liang, Amir Zadeh, and Louis-Philippe Morency (ACL 2018), **Oral** (12.8% acceptance rate).
- **Dynamically Adjusting Word Representations Using Nonverbal Behaviours (Link)**
  Yansen Wang, **Ying Shen**, Zhun Liu, Paul Pu Liang, Amir Zadeh, and Louis-Philippe Morency (AAAI 2019)

Industry Experience

Machine Learning Research Intern, Apple — New York, NY

- Mentor: Jiatao Gu — May 2023 - Sept 2023
  - Researching in diffusion models for image generation.

Academic Research Experience

Graduate Research Assistant, Virginia Tech — Blacksburg, VA

- Advisor: Lifu Huang — Aug 2022 - May 2024
  - Researching in large language models and vision-and-language model.

Graduate Research Assistant, Virginia Tech — Blacksburg, VA

- Advisor: Ismini Lourentzou — Aug 2022 - May 2024
  - Researching in multimodal large language models and embodied AI.

Research Associate, Carnegie Mellon University — Pittsburgh, PA

- Advisor: Prof. Louis-Philippe Morency and Prof. Graham Neubig — Jan 2019 - Jan 2020
  - Researching in multimodal machine learning, especially on representation learning and dialogue understanding.

Graduate Research Assistant, Carnegie Mellon University — Pittsburgh, PA

- Advisor: Prof. Louis-Philippe Morency — Sept 2017 - Jan 2019
  - Researching in multimodal machine learning and its applications, especially on representation learning.

Research Intern, Carnegie Mellon University — Pittsburgh, PA

- Advisor: Prof. Yoichi Matsuyama and Prof. Justine Cassell — July 2016 - Sept 2016
  - Building natural language understanding/generation module for socially aware robot assistant.

Selected Fellowships and Awards

Amazon-VT Fellowship	2023-2024
Third Place ($25,000) in the Fifth Amazon Alexa Prize SocialBot Grand Challenge (Team Leader)	2023
KLA-Tencor Excellent Student Scholarship, Fudan University (top 1%)	Oct 2016
EMC Excellent Student Scholarship, Computer Science Department, Fudan University (top 2%)	Apr 2016
National Scholarship (top 1%)	Oct 2015
iShamrock Software Competition 2015, 1st Runner-up	Mar 2015
Fudan University Excellent Student Scholarship, First Prize (top 4%)	Oct 2014

Competition Experience

The Fifth Amazon Alexa Prize SocialBot Grand Challenge, Team Lead — Nov 2022 – Sept 2023

- Led the VT HokieBot team in developing a personalized open-domain chatbot with long-term dialogue management and customizable automatic evaluation
- Awarded the **3rd** place prize for scientific innovation

Academic Service

Conference Reviewer: AAAI (2024), ACL (2023), NAACL (2024), EMNLP (2022, 2023, 2024), COLING (2022, 2024), CVPR (2024), ECCV (2024), NeurIPS (2024)

Skills and Interests

Computer Languages	Python, Java, C++/C, MATLAB, SQL, HTML/CSS, JavaScript
Frameworks and Tools	PyTorch, Tensorflow, Keras, Spring, Hibernate, WebGL, OpenCV, AWS, Hadoop, HBase
Languages	Mandarin Chinese (Native), English (Fluent), Japanese (Basic Conversational Proficiency)
Interests	Painting, Swimming, and Traveling