

TINGXI LI 李亭熹

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Education

University of Texas at Dallas

Doctor of Philosophy in Computer Science

Sep. 2024 – May 2029(Expected)

Richardson, TX U.S.A.

Dalian University of Technology

Bachelor of Science in Chemistry

Sep. 2019 – May 2024

Dalian, China

Technical University of Munich

Visiting Student: Computer Science

Apr. 2022 – Oct. 2022

Munich, Germany

Relevant Coursework

- Data Structures(TA)
- Linear Algebra
- C Programming
- Database

Academic Experience

Adversarial Attack on a Robotic Arm

Jan. 2023 – Present

UT Dallas | Supervisor: Wei Yang

Dallas, TX U.S.A.

- Replaced the non-differentiable heightmap renderer with a differentiable one, enabling gradient computation through the entire model. This enhancement facilitates direct optimization of the model using backpropagation algorithms.
- For the object grasping task investigation, experiments conducted within the Bulletarm robotic framework demonstrated that the effect of a given action on the environment is deterministic. Moreover, it was observed that the boundaries between success and failure within the action space are non-robust.
- Trained a deep neural network (DNN) with heightmap inputs to predict the expected reward of the reinforcement learning (RL) model.

LLMs for Chemistry Tasks

Oct. 2023 – Present

Dalian University of Technology | Supervisor: Yang Li

Dalian, China

- Use in-context learning for chemistry tasks, including predicting the yield of C-N cross-coupling reactions, retrosynthesis, and assessing the impact of molecular chirality on yields.
- Designed prompts for LLM, incorporating self-verification and Retrieval Augmented Generation (RAG) techniques to reduce hallucinations in LLMs performance on chemistry tasks
- Proposing improved SMILES representations has addressed the issue of distinguishing special molecular chirality.

LLM + OS

Mar. 2024 – Present

UT Dallas | Supervisor: Wei Yang

Dallas, TX U.S.A.

- Creating a dataset for an LLM-based agent framework intended to operate smartphone applications. Additionally, engaging in prompt engineering to mitigate hallucinations and enhance performance.

Industrial Experience

Shenzhen TenClass Technology Co. Ltd

Jan. 2022 – Apr. 2022

Intern

Shenzhen, China

- Conducted market research to understand the requirements for an AI character used in live streaming, analyzing recent academic papers and established commercial solutions.
- Designed and implemented a virtual host for live streaming using a combination of text-to-speech and speech-to-video models. Capable of responding real-time comments.

Awards and Foundation

Research Foundation for Outstanding Undergraduate

Oct. 2023 – Oct. 2025

Project Member

Dalian, China

- 300 USD granted by Dalian University of Technology.
- Project title: Benchmark LLMs for Chemistry Tasks.

Miscellaneous

Research Interest: AI Security; Software Engineering; AI for Science

Tech Stack: Python; C; C++; Java; PyTorch; LaTeX; SQL

Languages: English / Mandarin / Cantonese / German