

As a Ph.D. student in [AI Group](#) at School of Computing, University of Leeds. I'm supervised by [Prof. Anthony Cohn](#) and [Prof. David Hogg](#). My research area is in Knowledge Representation and Reasoning, and Large Language Models. Specifically, ontologies, knowledge graphs, qualitative spatial reasoning, logical programming, prompt engineering, and foundation model evaluation.

## EDUCATION

<b>Ph.D. in Computing</b> , <i>University of Leeds</i>	2020.10 - Present
<b>M.S. in Information and Communication Engineering</b> , <i>Shandong University</i>	2017.10 - 2020.7
<b>B.S. in Communication Engineering</b> , <i>Shandong University</i>	2013.10 - 2017.7

## PUBLICATION

- F Li, et al. "Advancing Spatial Reasoning in Large Language Models: An In-Depth Evaluation and Enhancement Using the StepGame Benchmark." *Proceedings of the AAAI Conference on Artificial Intelligence, 2024*
- F Li, et al. "Reframing spatial reasoning evaluation in language models: A real-world simulation benchmark for qualitative reasoning." *32nd International Joint Conference on Artificial Intelligence (IJCAI, Accepted), 2024*
- F Li, et al. "Ontology Knowledge-enhanced In-Context Learning for Action-Effect Prediction." *The Tenth Advances in Cognitive Systems Conference (ACS), 2022.*
- F Li, et al. "Exploring the GLIDE model for Human Action-effect Prediction." *LREC-PVLAM workshop, 2022.*
- F Li, et al. "An improved clear cell renal cell carcinoma stage prediction model based on gene sets [J]." *BMC bioinformatics, 2020.*
- F Li, et al. "Multi-scale stepwise training strategy of convolutional neural networks for diabetic retinopathy severity assessment." *International Joint Conference on Neural Networks (IJCNN), 2019.*
- Alomari M, F Li, et al. "Online perceptual learning and natural language acquisition for autonomous robots[J]." *Artificial Intelligence, 2022.*

## RESEARCH EXPERIENCE

- Enhancing LLMs' Logical Reasoning Capabilities through Hybrid Reasoning (University of Leeds & Microsoft) 2023.04 - Present**
- Analysis and refinement of spatial reasoning benchmarks and datasets, including bAbl, StepGame, and SpartQA.
  - Novel spatial reasoning benchmark creation with the realistic 3D simulation platform AI2Thor.
  - Integration of logic-based reasoning techniques, such as answer set programming, with LLMs.
  - Development of prompting strategies, including chain-of-thought and tree-of-thought, to enhance spatial reasoning in LLMs.
- Naive Physics Aware Language Model: What will Happen Next? (University of Leeds) 2020.10 - 2023.2**
- Retrieval of knowledge from the OpenCyc-based knowledge base (KnowRob) and the ConceptNet knowledge graph.
  - Learning of unseen knowledge through LLMs to infer information about concepts not defined in knowledge bases.
  - Enhancement of LLMs' reasoning capabilities by incorporating external knowledge via in-context learning.
  - Evaluation of the Diffusion model's ability to process both visual and textual inputs for image editing applications.

## CHALLENGE EXPERIENCE

EPIC-KITCHENS-100 Action Anticipation Challenge, 2021

## HONOR AND AWARD

Postgraduate Symposium, School of Computing, University of Leeds	Best Presentation
Excellent M.S. Thesis in Shandong University, China	Top 1%
National Scholarship and National Inspirational Scholarship, China	Top 1%
The 3rd award of National Undergraduate Student Mathematics Competition	Top 10%

## ACTIVITIES

Teaching Assistant of Centre for Satellite Data in Environmental Science - Doctoral Training, University of Leeds	2022 - 2023
Teaching Assistant of Machine Learning (COMP5611M) and Artificial Intelligence (COMP5623M), University of Leeds	2020 - 2022

## SKILLS

<b>Technical proficiencies</b>	Python, R, and Matlab for programming and data analysis; Deep learning model development using Py-Torch; Experience in logical reasoning programming with Prolog, Answer set programming.
<b>Communication</b>	English, Chinese (native speaker).