

# ZIYI (BELLA) LIU

☎ 650-713-9455 ✉ [liuziyi219@gmail.com](mailto:liuziyi219@gmail.com) 🏠 [liuziyi219.github.io](https://liuziyi219.github.io)

## Research Interests

---

Large Language Model (LLM), Social Reasoning, Trustworthy NLP, Human-centered AI

## Education

---

**University of Southern California** 2023 – Present  
*PhD, Computer Science (Advisor: Jieyu Zhao)*

**University of Southern California** 2021 – 2023  
*MS, Computer Science (Advisor: Xiang Ren)*

**Shaanxi Normal University** 2016 – 2020  
*BS, Computer Science*

## Publications

---

**InterIntent: Investigating Social Intelligence of LLMs via Intention Understanding in an Interactive Game Context..** Ziyi Liu\*, Abhishek Anand\*, Pei Zhou, Jen-tse Huang, Jieyu Zhao. Accepted in EMNLP 2024 main conference.

**Self-contradictory Reasoning Evaluation and Detection.** Ziyi Liu, Soumya Sanyal, Isabelle Lee, Yongkang Du, Rahul Gupta, Yang Liu, Jieyu Zhao. Accepted as Findings of EMNLP 2024.

**Are Machine Rationales (Not) Useful to Humans? Measuring and Improving Human Utility of Free-Text Rationales.** Brihi Joshi\*, Ziyi Liu\*, Sahana Ramnath, Aaron Chan, Zhewei Tong, Shaoliang Nie, Qifan Wang, Yejin Choi, Xiang Ren. In Proceedings of ACL 2023.

**XMD: An End-to-End Framework for Interactive Explanation-Based Debugging of NLP Models.** Lee, Dong-Ho, Akshen Kadakia, Brihi Joshi, Aaron Chan, Ziyi Liu, Kiran Narahari, Takashi Shibuya et al. In Proceedings of ACL 2023 Demos.

**ER-Test: Evaluating Explanation Regularization Methods for NLP Models.** Brihi Joshi\*, Aaron Chan\*, Ziyi Liu\*, Shaoliang Nie, Maziar Sanjabi, Hamed Firooz, Xiang Ren. Findings of EMNLP 2022.

**A deep learning framework for multi-level peptide-protein interaction prediction.** Yipin Lei, Shuya Li, Ziyi Liu, Fangping Wan, Tingzhong Tian, Shao Li, Dan Zhao, Jianyang Zeng. Nature Communication 2021.

(\* equal contribution)

## Work Experience

---

**Nokia Bell Labs | AI Research Intern** Jun 2024 – Aug 2024

- Project: Reasoning generation of trouble tickets using RAG.
- Trained dense retrieval (DR) model to learn the similarity between trouble ticket and reasoning, achieving 25% for Recall@1.
- Deployed RAG using DR model and vanilla LLaMa3 to generate reasoning, achieving 83% BertScore.
- Ranked the reasoning generated by fine-tuned LLaMa2 using dense retrieval model for hallucination control, achieving 89% BertScore.
- Deployed multi-agent reasoning using RAG and fine-tuned LLaMa2.

**1DATA (Series A startup) | Algorithm Engineer Intern** Nov 2020 – Jul 2021

- Project: End-to-end system for information retrieval from semi-structured forms.

**Silexon AI Technology | Algorithm Engineer Intern** Jun 2020 – Nov 2020

- Project: Peptide-protein interaction prediction using deep learning.

## Teaching

---

### Teaching Assistant

- CSCI 566 Deep Learning (Spring 2024), Instructor: Yue Zhao
- CSCI 544 Applied Natural Language Processing (Fall 2024), Instructor: Swabha Swayamdipta

## Service

---

**Reviewer** EMNLP (2023-2024), NAACL (2024), ACL (2024)

## Honors

---

**Best Research Award - Computer Science** (1 of 2 from entire class), USC School of Engineering 2023.

**National Scholarship** (Top 0.2%), The Ministry of Education of P.R. China 2017.

## Technical Skills

---

**Programming languages:** Python, Java, SQL, JavaScript, HTML, CSS, C++, C

**Software & Tools:** PyTorch, Scikit-Learn, SpaCy, Docker