BINGJUN GUO

1010 W Urbana, IL 61801 | +1 (217) 979-0282 | bingjun3@illinois.edu / bingjun.21@intl.zju.edu.cn

EDUCATION

University of Illinois Urbana-Champaign *Urbana-Champaign, US* *Sep. 2021 – present*
Bachelor of Science in Computer Engineering *GPA: 3.93/4.0*

Zhejiang University *ZJU-UIUC Institute, Haining, China* *Sep. 2021 – present*
Bachelor of Engineering in Electrical and Computer Engineering *GPA: 3.98/4.0*

ACADEMIC INTERESTS

My research experiences are about utilizing various weakly supervised learning insights to represent data with various structures and modalities, while my major is about understanding computer and electronic systems at all abstract levels. I also have educational experiences in neural engineering, metaphysics, and epistemology. Ultimately, I am wishing to blend all of them together for the development of artificial intelligence which is seriously intelligent.

RELEVANT EXPERIENCES

Foundation Models Augmented Data Cleaning Framework *Jun. 2023 – Aug. 2023*
Summer Research Program, Center of Data Science, ZJU

- Developed a representation learning model for heterogenous tabular data adopting pretrained language models
- Participated in the design of a pipeline with cutting edge error detecting and data cleaning methods achieving an ideal performance on representing dirty datasets
- Experimented on improving model robustness through few-shot prompting to LLaMA-7B
- Gained a comprehensive and detailed understanding of all mainstream deep language models

Review on Knowledge Graph Representation Methods *Jun. 2022 – Jul. 2022*
Summer Research Project, ZJU-UIUC Institute

- Experimented concurrent embedding approaches for knowledge graphs including TransE, TransH, TransR, etc. on distinguished datasets
- Analyzed differences between the performances tracing back to features of datasets and model structure
- Developed a first understanding of representative learning, knowledge engineering as well as skills to set up the research environment

RELATED COURSE WORK

Overview

- A+ or A in all Physics, Philosophy, and Rhetoric courses
- A or A+ in Computer Systems Engineering, Data Structures, Database Systems, Machine Learning, Probability with Engineering Applications, Discrete Math, Field & Waves I, Neural Network Modeling Lab, and Analog Signal Processing
- A- in the other Mathematics courses including Calculus II&III, Linear Algebra (actually given as Matrix Analysis combined with Abstract Algebra), and Differential Equations

Translating-VAE Representing Knowledge Graph for Knowledge Inference *Spring 2024*
Individual Final Project, Neural Network Modeling Lab (PSYC 489)

- Introduced TransE mechanism in VAE latent space for more disentangled representations to infer new relations on knowledge graphs
- Achieved a performance slightly better than the baseline (TransE) with insufficient training
- No machine learning packages involved (e.g. numpy, PyTorch); all implemented from scratch

A Unix-like Operating System Kernel *Fall 2023*
Cooperative Final Project, Computer Systems Engineering (ECE 391)

- Mainly responsible for developing the terminal, which requires sufficient familiarity with all Unix OS features including interrupts, scheduling, virtual memory, and file system; synchronization skill was especially valued
- Developed additional functions such as command history, auto-command-completion, and mouse cursor

Honors & Awards

Dean's List *Spring 2024, Fall 2023*
(~top 20% among UIUC undergrad)

Outstanding Summer Research Project *Summer 2023*
(~top 20% in ZJU-UIUC Institute)

Mathematical Contest in Modeling *Finalist* *Spring 2023*
(~top 1.5% worldwide)

Skills & Language Qualification

- Programming Languages: Python (including paradigms: PyTorch, Keras, transformers, etc.), C/C++ (including CUDA interface), x86 assembly, bash
- Mathematics Tools: MATLAB, SageMath
- Database Systems: mySQL, Neo4j, MongoDB

TOEFL iBT *30 30 25 25* *Feb. 2023*