

# JIAXIN ZHANG

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## Summary

I am currently a PhD student in Artificial Intelligence at the University of Strathclyde, my research focuses on advancing AI's numerical reasoning through deep learning technologies. I have strong foundation in NLP and deep learning principles including Large Language Models, and 5 years experience in Python and relevant frameworks such as PyTorch and Hugging Face. Before starting on my PhD journey, I gained two years of practical experience as a Natural Language Processing Engineer, where I refined my skills in deploying machine learning solutions in real-world settings. My strong communication abilities enhance my effectiveness in managing large-scale projects and working collaboratively. I am also committed to being a team player, skilled at engaging with colleagues from diverse professional backgrounds.

## Education

### University of Strathclyde

Oct 2020 – May 2024 (Estimated)

*PhD in Natural Language Processing*

*Glasgow, UK*

- Thesis: Automated Mathematical Reasoning in Artificial Intelligence over Textual and Multi-Modal Data
- Advisor: Prof. Yashar Moshfeghi
- Scholarship: Fully funded by “ Strathclyde Centre for Doctoral Training (SCDT) Research Studentship ”
- Research Interests: automated solving math word problems, automated solving geometry math problems, LLMs for math reasoning tasks

### University of Sheffield

Seq 2017 – Oct 2018

*MSc in Advanced Computer Science*

*Sheffield, UK*

- MSc Thesis: Natural Language Generation with Different Styles (graded with Distinction)
- Advisor: Prof. Andreas Vlachos

### Chang'an University

Seq 2011 – Jul 2015

*BSc in Network Engineering, Computer Science*

*Xi'an, China*

- Chang'an University is part of the Double First Class University Plan and Project 211 of China

## Work Experience

### University of Strathclyde, UK | TA of CS 985 Machine Learning for Data Analytics

Feb 2022 – Apr 2024

- Lead students to practice implementing the deep learning techniques taught in class.
- Addressed student inquiries related to course content and assignments.
- Headed the Teaching Assistant team in grading exams and assignments.

### TCL Technology, China | NLP Researcher

May 2019 – Sep 2020

- Implemented the pipeline in Python to clean and process the data used for training the deep learning models.
- Used TensorFlow to develop a ChatBot utilizing the advanced NLP technologies such Seq2Seq architecture and BERT.
- Built a retrieve system to select the most closely matching responses by deep learning methods such as LLMs and traditional algorithms like trie-tree and bk-tree.
- Drafted guidelines for interns to annotate data sets effectively, facilitating the efficient training of the ChatBot.

### Ping An of China, China | NLP Engineer Intern

Mar 2019 – Apr 2019

- Collaborated with a team to establish guidelines and built an automatic pipeline to automate the approval process of insurance provisions utilizing advanced NLP and deep learning technologies.
- Implemented tools for extensive text processing tasks such as extracting vital information from the raw text.

### Beyes Data Intelligence Technology Service, China | NLP Engineer

Oct 2018 – Dec 2018

- Built a classification model using machine learning algorithm such as the logistic classification to categorize the objectives of various stores within a designated business district based on an analysis of structured information.

## Publications

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Please also check my [Google Scholar](#) page. The first author is highlighted by \*.

### Accepted Papers

1. Jiaxin Zhang\*, Yashar Moshfeghi. **ELASTIC: Numerical Reasoning with Adaptive Symbolic Compiler**. Accepted for Advances in Neural Information Processing Systems 35 ([NeurIPS 2022](#)).
2. Jiaxin Zhang. **A Combination of Lexicon-Based and Classified-Based methods for Sentiment Classification based on Bert**. Accepted in Journal of Physics: Conference Series (2021).

## Skills

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**Languages:** Python, HTML, CSS, SQL

**Deep Learning Framework:** Pytorch, Transformers, Accelerator, scikit-learn, pytorch-lightning

**Analysis and Visualization:** numpy, pandas, matplotlib, TikZ

**Tools:** git, bash, vim

**Languages:** Chinese (native), English (proficient)

## Service to the Research Community

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**3rd MATH-AI Workshop at NeurIPS'23** | *Reviewer*

**Oct 2023**

- Be invited to serve as a reviewer for paper submissions to the 3rd MATH-AI Workshop at NeurIPS 2023.