

Keqin Peng

SUMMARY

Keqin Peng, graduated from Beijing Normal University's School of Artificial Intelligence with a Bachelor of Science in Computer Science and Technology in July 2022. Currently, I am pursuing a Master's degree in Robotics and Artificial Intelligence at the James Watt School of Engineering, University of Glasgow.

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My primary research interests include the application and improvement of natural language processing methods, with a focus on document-level information extraction and mining. Specific research directions cover named entity recognition, relation extraction, event extraction, text summarization, etc.

EDUCATION

University of Glasgow

Sep 2024 – Sep 2025

*MSc, James Watt School of Engineering, Robotics and Artificial Intelligence
Key Course Grade: Intro to AI (Grade A2)*

Beijing Normal University

Sep 2018 – Jul 2022

*Bachelor of Science, School of Artificial Intelligence
Awarded Prize of Jing Shi Scholarship*

WORK EXPERIENCE

Changsha Bank Digital Technology Co., Ltd.

Jan 2024 – Sep 2024

Backend Developer, Development Department I

Project Development

- **Smart Tax RPA Project Phase I Development**

- Participated in requirement discussions to determine functional scope and technical selection.
- Developed the automatic accounting robot module, including web operations and local automatic processing.

- **Enterprise Production Management System (EPMS) Phase I Development**

- Developed modules for configuration center, covering functionalities like annual work calendar, project list, assigned tasks, cost expenses, and business contracts.
- Participated in the logical design and development of the project center module to ensure efficient management of project lists and assigned tasks.

Corporate AI Transformation Research

- **Writing Company AI Development Recommendations**

- Analyzed the company's current situation and industry competition to select appropriate technology routes and development paths.
- Conducted an in-depth analysis of suitable AI development paths, investment scale, product output models, and payback cycles.
- Drafted basic development processes and norms for the company's AI development team.
- Designed theoretical knowledge evaluation covering basic principles, model architecture, and application scenarios.

- **Medical Experiment Text Dataset Creation**

- Collected 200,000 operation texts from global medical laboratories.
- Cleaned and organized data using a hybrid method of NER + RE to ensure uniform format and valid content.
- Created high-quality datasets at a lower cost by combining small-sample pre-training with automatic annotation models.

- **Technology Validation and Pipeline Setup**

- Validated existing technologies such as NER, RE, SRL, and KG to provide feasible technical paths for task completion.

- **Proposing New Tasks and Designing Models**

- Innovatively proposed and completed the task of extracting key procedural diagrams from natural language texts.

- **Redesigning End-to-End Models**

- Optimized model design to address issues of error accumulation and propagation.

RESEARCH

Beijing Normal University

Mar 2022 - Jul 2022

Second Author

Research Focus: Improvement of Document-Level Relation Extraction Methods

- **Model Optimization and Technical Validation**

- Designed and implemented a new model, optimizing the accuracy of document-level relation extraction by reducing redundant data input and pixelizing entity relationships.

- **Paper Summarization and Writing**

- Summarized research methods and outcomes, writing a paper titled "Document-level relation extraction with less redundant image-style feature".
- Conducted an in-depth study on the application of U-Net with depthwise separable convolutions and big kernels for document-level relation extraction, completing a paper titled "U-Net with depthwise separable convolutions and big kernels for document-level relation extraction".

Graduation Project, Beijing Normal University

Oct 2021 - May 2022

Research on Multi-Document Summarization Method Based on Event Structure

- **Technical Improvements and Model Design**

- Introduced a hierarchical Transformer model to hierarchically connect and encode paragraphs after sorting and filtering, improving the quality of generated summaries.
- Developed an LSTM-based sorting algorithm to calculate paragraph-title correlation, enabling the selection of optimal paragraphs for training and allowing the model to handle larger inputs.
- Utilized a hierarchical Transformer structure to learn contextual information within paragraphs and between paragraphs, capturing event structures.

TECHNICAL SKILLS

Programming Languages: Java, SQL, C, C++, Python, MATLAB

Office software: Microsoft Office Specialist(Expert), Overleaf, tableau