

# Junru Liu

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## EDUCATION

### Xi'an Jiaotong-Liverpool University

Suzhou, China

*Bachelor of Science in Information and Computing Science*

*September 2018 – July 2022*

- Rank: Year 1: 1/173, Year 2: 1/430, Year 3: 5/286
- GPA: 4.0/4.0
- Selected Coursework: Data Structures, Algorithms, Operating Systems, Database, Networking, Machine Learning
- Self-study: Probability and Statistics, C/C++ Programming, CS224n
- Honors & Awards: National Encouragement Scholarship, Provincial Outstanding Student, Academic Excellence Award

## PUBLICATIONS

- Q.Yuan, P.Ni, **J.Liu**, X.Tong, H.Lu, G.Li, S.Guan, "An Encoder-decoder Architecture with Graph Convolutional Networks for Abstractive Summarization," 2021 IEEE 4th International Conference on Big Data and Artificial Intelligence (BDAI), 2021, pp. 91-97, doi: 10.1109/BDAI52447.2021.9515256.
- X.Tong, P.Ni, Q.Li, Q.Yuan, **J.Liu**, H.Lu and G.Li, "Urban Crime Trends Analysis and Occurrence Possibility Prediction based on Light Gradient Boosting Machine," 2021 IEEE 4th International Conference on Big Data and Artificial Intelligence (BDAI), 2021, pp. 98-103, doi: 10.1109/BDAI52447.2021.9515252.

## RESEARCH EXPERIENCE

### Cross-lingual Semantic Parsing

Supervised by Professor Rui Zhang

*Pennsylvania State University*

*April 2021 – Present*

- Processed different datasets into a uniform format to publish a unified dataset for cross-lingual semantic parsing
- Conducted literature review to select SOTA cross-lingual semantic parsing transfer models with typical methodologies
- Demonstrated and analyzed performance gap of selected models on the unified dataset comparing different languages

### Intelligent Policy Management System

Supervised by Professors Wenjin Lu & Gangmin Li

*Xi'an Jiaotong-Liverpool University*

*October 2020 – Present*

- Worked with Beijing Telecom to build an intelligent policy management system for policy query and analysis
- Developed the policy query module using whoosh based inverted index to support policy search through keywords
- Implemented the policy analysis module using LDA model to evaluate the policy topics
- Extracted relationships in policies and summarized policies with GCN to analyze the trends indicated in policies
- Served as an auxiliary tool for policy-related decision making

## PROFESSIONAL EXPERIENCE

### Shanghai Ideal Information Industry(Group) Co.,Ltd

Shanghai, China

*Natural Language Processing Intern*

*June 2020 – September 2020*

- Classified citizen complaints to various categories using TF-IDF to assess municipal services with 84% average accuracy
- Developed a question and answering system with text similarity techniques to support intelligent citizen hotline
- Established a web page enabling users to extract keywords in a document with 3 supported methods online, which served as a basic processing tool in the Research & Development Center

### Emerson Electric (China) Holdings Co., Ltd

Remote Work

*Frontend Developer Intern*

*July 2020 – September 2020*

- Led a team to develop a Wechat mini program supporting customers to submit their maintenance requirements and administrators to manage submitted maintenance orders, which was deployed onto the server for daily collection
- Designed the user interface to provide better user experience using WXML/HTML and WXSS/CSS
- Developed the interaction between frontend and backend to support fast data exchange using Weixin Script/Javascript

## PROJECTS

### Second-hand Item Information Exchange Platform

Suzhou, China

*Xi'an Jiaotong-Liverpool University*

*September 2021 – December 2021*

- Led a team to create a web application for university students to sell/buy second-hand items in scrum process
- Developed *user registration* and *product information display* modules using Spring Boot and MyBatis to write user data into the database and pass the product data in the database to users
- Tested the interface of *password retrieval* and *product upload* using JUnit to detect software failures

### Large Efficient Flexible and Trusty (LEFT) Files Sharing System

Suzhou, China

*Xi'an Jiaotong-Liverpool University*

*October 2020 – December 2020*

- Constructed a distributed file sharing application to support file synchronization among multiple peer nodes
- Designed a new protocol based on TCP to achieve the fast synchronization of large files among nodes
- Developed the encryption function during file transfer to increase data security

## SKILLS

**Programming Languages:** Python, Java, C/C++, JavaScript, HTML/CSS

**Frameworks & Databases:** PyTorch, Tensorflow, Spring Boot; MySQL, MongoDB, Neo4j

**OS & Libraries:** Linux; PyMongo, Pandas, NumPy, Matplotlib, Plotly, Flask, OpenCV

**Languages:** English (Fluent), Spanish (Conversational), Chinese (Native Speaker)