# Kefei Duan

## Basic Information

Name: Kefei Duan
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## About Me

My name is Kefei Duan, who is an undergraduate student at Peking University and will graduate in 2023. I'm interested in natural language processing, natural language understanding, question answering system, knowledge extraction, human-computer interaction, etc. I would like to pursue a PhD degree in related area after I graduate from Peking University.

## Research Interests

Natural Language Processing/Understanding
Question Answering System/Chat bot
Knowledge Extraction
Human-Computer Interaction

## Objective

Ph.D. Compute Science

## Education

B.S. Artificial Intelligence Peking University 09/2019 - 07/2023

## Grades

Total GPA: 3.741/4.0

## Distinction/Awards

China Merchants Securities Scholarship Peking University 09/2022
Three Good Student Award Peking University 09/2022
National Inspirational Scholarship Peking University 10/2022

National Scholarship Peking University 09/2021
Three Good Student Award Peking University 09/2021
Third Class Scholarship Peking University 09/2020
Merit Student Award Peking University 09/2020

## Publication

**MetaFill: Text Infilling for Meta-Path Generation on Heterogeneous Information Networks**
Zequn Liu, Kefei Duan, Junwei Yang, Hanwen Xu, Ming Zhang and Sheng Wang
EMNLP, 2022

## Project Experience

**Metapath Generation** 09/2021 - 07/2022

The title of our paper is **MetaFill: Text Infilling for Meta-Path Generation on Heterogeneous Information Networks**, which is **accepted** by **EMNLP 2022**.

I work on this project under the supervision of Zequn Lin, a Ph.D. student at Peking University. Employers are Prof. Ming Zhang at Peking University and Prof. Sheng Wang at University of Washington.

The key idea behind this project is to formulate meta-path identification problem as a word sequence infilling problem, which can be advanced by Pretrained Language Models.

In this project, my main contributions are to do some preliminary research, implement the baselines and process some data.

**Sentence-level Relation Extraction** 11/2021 -

The title of our paper is **Relation Extraction via Joint Reasoning with Texts and Knowledge Graphs**, which is **rejected** by **EMNLP 2022**.

I work on this project under the supervision of Meng Qu, a Ph.D. student at Quebec Artificial Intelligence Institute. Employers are Prof. Ming Zhang at Peking University and Prof. Jian Tang at Quebec Artificial Intelligence Institute.

The key idea behind this project is to link entities in sentence to entities in Knowledge Graph and utilize the structured information in KG to facilitate Relation Extraction.

In this project, my main contributions are to do some preliminary research, implement our algorithm and baselines, and write the paper.

We will work on this work continually and try to solve the problems mentioned by reviewers, hoping to submit it again.

**Biomedical Document-level Relation Extraction** 08/2022 -

I work on this project under the supervision of Prof. Sheng Wang at University of Washington.

## Research Projects in Courses

**Artificial Intelligence for Drug** 03/2022 - 06/2022

Project for course Technology Innovation and Enterpreneurship. Aim to use artificial intelligence to facilitate the production of drug-relief medicine.

My main role in this project is to lead the group and use some existent algorithms to predict the drug activities.

**Single Image Reflection Removal** 03/2022 - 06/2022

Project for course Computational Photography: Image Formation Theory and Deep Learning Practice. Work on my own and aim to remove the reflection in a image.

**Analysis of the Author of The Story of the Stone** 03/2022 - 06/2022

Project for course Thinking in programming. Work in a group of two and aim to use some machine learning technics to analyze whether the first 80 chapters and the last 40 chapters of Dream of the Red Chamber were written by the same person.

**Machine Learning Translation** 03/2021 - 06/2021

Project for course Learning Data Science with Python. Work in a group of two and aim to translate English corpus into Chinese.

**Body Posture Detection** 03/2021 - 06/2021

Project for course Machine Learning. Work in a group of five and aim to detect the posture of one person and give it to another person.

**Medical Concept Generation** 03/2021 - 06/2021

Project for course Algorithm Design and Analysis. Work in a group of two and aim to generate the concept description for given medical terms.

## Teaching Experience

**Introduction to Computation (C)** 09/2022 - 12/2022

Teaching Assistant, with Prof. Liyan Qian, at Peking University