Kun Lai

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Education

Rice University **Aug. 2021 – Dec. 2022(Expected)**

Master in Computer Science

Tsinghua University **Sept. 2017 – Jun. 2021**

Bachelor of Engineering in Automation

Work Experience

Baidu Inc. **Oct. 2020 – Nov. 2020**

Software Engineer Intern *Beijing, China*

- Participated in the development of a QA(Question Answering) system using **Python** and **Pytorch**.
- Extracted, filtered, and generated more than **30GB** data based on Baidu's knowledge base and Chinese QA datasets utilizing **SQL Server**, **JSON**, **SQL**, and **Python**.
- Proposed to build semantic trees as training data, which was easier to search for the information needed and more intuitive than the previous simple dictionaries.

Tsinghua University NLP Lab **Feb. 2020 – Oct. 2020**

Research Assistant *Beijing, China*

- Built up an open-domain QA system based on Knowledge Graph and Transformer using **Python** and **Pytorch**. The Model was evaluated on HotpotQA and achieved a score **64**% higher than the baseline model.
- Helped to develop a ranking model for the lab's Information Retrieval tool package named OpenMatch. Improved its MRR metric by **17**%.

Project Experience

RiceBook **Dec. 2021**

- Developed a social networking web application.
- Utilized **JavaScript, HTML/CSS, React and Jest** for **Frontend** development and test.
- Utilized **MongoDB, Node.js** for **Backend** development.
- The frontend of the application was deployed on **Surge**.

Cell Instance Segmentation **May 2021**

- Implemented a model which realized pixel-wise classification for cell pictures utilizing **Python and Pytorch**. Designed the model based on UNet, whose symmetric structure and sampling method
- Achieved an accuracy of **87**% under Jaccard metric and ended in rank **8/103** in class.

Fashion Classification Contest **Nov. 2019**

- The contest was based on Fashion-MNIST dataset. Each example is a 28x28 grayscale image, associated with a label from 10 classes.
- Developed an image classification model based on **Deep Learning** methods.
- Utilized **Python** and **Tensorflow** to build a four-layer neural network, which achieved an accuracy of **89.3**% **(top 10**% in class).

P2P Instant Messaging Application **Dec. 2019**

- Utilized **WinForm** and **C#** for UI design and development.
- Used **MySQL** to store chat history and account infomation.
- Implemented video call and message sending based on **Socket** Programming.

Technical Skills

Programming Languages: Python, C, C++, C#, HTML/CSS, JavaScript, SQL, R, Shell, Matlab.

Tools and Frameworks: Linux, Git, MySQL, MongoDB, Spark, Hadoop, Amazon Web Services, Node.js, Bootstrap, AJAX, Numpy, Pandas, Matplotlib, Sklearn, Tensorflow, Pytorch, Qt, WinForm.