Zhou(Sophia) Liu

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Education

Northeastern University, Boston, MA — 2021.9 – Current
- M.S. in Computer Science, *GPA: 4.0/4.0*

Harvard University, Cambridge, MA — 2019.9 – 2020.7
- Visiting Scholar at Institute for Quantitative Social Science

Peking University, Beijing, China — 2011.9 – 2021.7
- Ph.D. in Philosophy
- B.A. in Philosophy and Economics

Experience

China Biographical Database Project, Beijing, China — 2020.9 – 2021.9
Software Engineer, Part time
- Led **data mining** work of the team, solved biographical information extraction problem in ancient Chinese texts with **NLP models** and greatly improved work efficiency
- Applied **Bi-LSTM-CRF** and **BERT** model with **Pytorch** on ancient Chinese local gazetteers for a **NER** task, trained with over 250k records on **GPU(Google Colab)**, gained F-score over 80% with 19 name entities
- Developed the automatic tagging platform based on trained model with GUI in **Python (tkinter)** allowing for text input, automatic tagging and text output
- Papers of related work accepted by *International Journal of Digital Humanities*

Projects

Red Panda Camp Web Project | WebLink | CodeLink
- Implemented a full stack social network website for red panda fans posting, commenting and starring in **JavaScript** by **Express** framework with **MVC** architecture and deployed to **Heroku**
- Enabled login, author and post validation with **Express Middleware**; stored users, posts and reviews with **MongoDB/Atlas** and secured the website with **Mongo Sanitize**
- Called **Cloudinary API** to store images and **Mapbox API** to show the red panda location on the map

Social Blog Web Project | WebLink | CodeLink
- Implemented a full stack social network website with which users can post texts and images, comment and liked each other in **Python** by **Django** framework with MVT architecture and deployed to **Heroku**
- Enabled user registration with Django authentication form, implemented CRUD functionality with models and Django views, styled the website with **bootstrap** and stored the users and blogs with **SQLite**

Voice Powered Budget Tracker App | WebLink | CodeLink
- Implemented a budget tracker app to record income/expense by category and date using **React** framework, leveraged **Context API** to manage transactions, and stored records by **Local Storage**
- Supported interactive voice control by **Speechly** and deployed to **Netlify**

Linux Mini Shell Project | CodeLink
- Implemented a **linux** mini shell in C supporting exit, help, cd, pwd, history commands; other commands are forked as another process and executed by Linux
- Implemented keyboard short cuts with **signal handler**; enabled pipes with **inter process** communication

Technical Skills

- Programming Language: Python, Java, C, C++, JavaScript, Kotlin, R, SQL, Shell script(Linux)
- Framework and Tools: Spring Boot, React, Django, Flask, Node, Express, MongoDB, git
- Data Science: PyTorch, TensorFlow, Machine Learning, NLP (Transformer, BERT, GPT-3)

Related Courses

- Data Structure and Algorithms
- Object-Oriented Design
- Computer System
- Mobile Application Development
- Database Management