

Zhengxu Wang

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Portfolio: <https://zhengxu.pages.dev/>

EDUCATION

Boston University, <i>Master of Computer Science</i> (GPA 3.75)	Boston, U.S.	Sep 2022 - Jan 2024
Beijing University of Technology, <i>Bachelor of Computer Science and Technology</i>	Beijing, China	Sep 2017 - Jul 2021

SKILLS

Languages: Python, Java, JavaScript, TypeScript, C++, CSS, SQL
FrameWork: Docker, React, Node.js, VUE.js, Spring Boot, Flask, QT-C++, PyTorch, TensorFlow, K8s
Tools: MySql, OracleDB, SqlServer, MongoDB, Hive, AWS, Azure, Neo4J, ElasticSearch, Redis

WORK EXPERIENCES

Software Engineer Intern React, AWS, JavaScript, Python, Flask Jan 2023 – May 2023
BU Spark & UmpScores Boston, MA

Provided accurate and transparent season long metrics and individual game performance measurements of baseball games.

Website: [UmpScores](https://umpcores.com)

- Front-end: **React**-redux (**JavaScript** Framework). Create a new table for the hardcoded data in the front-end and add it to an existing table.
- Back-end: **Flask** (Python) with data stored in **AWS**. Update the back-end using newer libraries make the app more scalability.

Data Engineer Java, JavaScript, K8s, Spring, Docker, ElasticSearch, OracleDB, Neo4J Jul 2021 – Aug 2022
Atos Information Technology Co. Ltd Beijing, China

Developed an interactive knowledge graph based on document metadata and content for the company's document management system. Front and back end as independent **micro-services**.

- Backend: **Springboot Admin** starts the **Neo4j** and **MySql** databases, **K8s** starts the **Java**-written **RestfulAPI** processor and data synchronization program, use **Docker** to deploy.
- Frontend: **VUE.js** and **AntV** implement multi-level click expansion of nodes in the graph and file jumping.
- Optimized the **ElasticSearch** micro-service, delivering KG-based search and recommendation functionality and implementing a scalable, distributed deployment. Connected the system to **OracleDB** to provide efficient data management and use **Redis** to accelerate high concurrency search speed.

Research Assistant Python, PyTorch, CV Nov 2020 – Jul 2021
Chinese Academy of Sciences Beijing, China

MRI Brain Image Segmentation Assist Alzheimer's Diagnosis Published Paper: [China Digital Medicine](#)

- Added **Self-Attention** and Generalized-Dice Loss to **PyTorch**-based **3D-Unet** model to segment the Hippocampus region and automatically quantify the degree of Hippocampal atrophy. The dice coefficient of the segmentation result exceeds 0.9.
- Completed the visualization of model prediction results using **Matplotlib** and **FreeSurfer**.

NLP Algorithm Engineer Intern Python, TensorFlow, NLP Jul 2020 – Nov 2020
Asia-Info Data Co. Ltd Beijing, China

- Built **Scrapy Web-Crawler** to get 200k medicine instructions as training corpus, build the **Tensorflow(Keras)**-based **CNN** and **RNN** models to train classification model mean-AP reached 96%.
- Implemented **Transformer** and **CRF** model to implement NER and get triplets, constructed a KG.

Natural Language Processing Python, PyTorch, NLP Sep 2022 – May 2023
Boston University [Project Paper](#)

- **ChatBot** using GRU+Seq2Seq implement PubMed QA data to realize medical advice chatbot.
- Using Neo4j as graphDB, **BERT**-based NER model to extract triplet from dataset (same as chatbot training data) create a knowledge graph for explain the chatbot's results.

Distributed User-Centric Data Science Python, Docker Sep 2022 – May 2023
Boston University

- Implemented distributed computing using **Ray** to calculate the **SHAP** values of DL models and instrumented the pipeline to collect performance traces. Visualized these traces to identify bottlenecks and optimize program execution by **Jaeger**.
- Packaged the program as a **Docker** image and deployed it run on the Mass Open Cloud platform.