Zhengxu Wang

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EDUCATION

Boston University, *Master of Computer Science* (GPA 3.75)	Boston, U.S.	*Sep 2022 - Dec 2023*
Beijing University of Technology. *Bachelor of Computer Science and Technology*	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**
Tools:	**MySql, OracleDB, SqlServer, MongoDB, Hive, AWS-RDS, Neo4J, ElasticSearch, Nacos, Redis**

WORK EXPERIENCES

BU Spark & UmpScores	**Software Engineer Intern**	Boston, MA	*Jan 2023 – May 2023*

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

• 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.

Atos Information Technology Co. Ltd	**Data Engineer**	Beijing, China	*Jul 2021 – Aug 2022*

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, **Nacos** 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.

Chinese Academy of Sciences	**Research Assistant**	Beijing, China	*Nov 2020 – Jul 2021*

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**.

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

• 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.

RESEARCH & COURSE WORK

Natural Language Processing	Boston University	Project Paper	*Sep 2022 – May 2023*

• **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 trainning data) create a knowledge graph for explain the chatbot's results.

Objective-Oriented Design – Java	Boston University	*Sep 2022 – May 2023*

• Designed and built multiple Java applications including Tic-Tac-Toe, Blackjack, Pokémon, and a Bank System. Demonstrating deep understanding of object-oriented programming principles of design, encapsulation, inheritance, and polymorphism.

• Be this course's grader in the spring semester of 23'.

User-Centric Data Science	Boston University	*Sep 2022 – May 2023*

• 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.