Ruijia Chen

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Carnegie Mellon University, 5000 Forbes Ave, Pittsburgh, PA, 15213

Education

Carnegie Mellon University

Master of Science in Electrical and Computer Engineering **Expected Dec.2020**

Master of Science in Civil & Environmental Engineering ***GPA:3.78*** **Dec.2018**

Selected Courses*: Introduction to Computer Systems, Data Structures and Algorithms, Data Management, Machine learning, Web Application(Django), J2EE Web Application Development, Building Reliable Distributed Systems*

Huazhong University of Science and Technology

B.Eng in Water Supply and Sewerage Science & Engineering ***GPA:3.67(Top 10)*** **Jun.2016**

Skills

Programming languages: Java, Python, C, SQL, HTML/CSS/JavaScript, PHP, JSP, bash script

Tool: Django, Bootstrap, Apache Hadoop, PyTorch, MATLAB, MySQL, Docker, Git, Terraform, Trello

Technical skills: Data mining, Agile Development, Machine learning

Internship & Research Experience

CellOrganizer Package Development **May.2018-Dec.2018**

Research Programmer *Murphy Lab in CMU*

- Developed a python wrapper for **Docker** version of CellOrganizer package to make it more **accessible** to none-MATLAB users.
- Extracted users' information and corresponding issues to produce work efficiency reports via **GitLab APIs**.
- Designed **MATLAB** test framework and test cases to catch more than **40** implicit function issues.

Reaction diffusion system prediction based on convolutional neural network **January.2019-May.2019**

Research Assistant *Computational Bio-Modeling Lab's in CMU*

- Designed and trained an **encoder-decoder** based on **convolutional neural network**(CNN) to directly predict the concentration distribution instead of by tedious FEM calculation.
- Set simulation parameters such as boundary conditions and time the input **features** and managed the trained CNN model to learn the time-dependent behavior of the reaction-diffusion system through the input time feature.
- Tested model and found model capable of providing concentration prediction at certain time directly with high test accuracy (**mean relative error** < 3.04%) and 300 times faster than the traditional finite element method(FEM).

Projects Experience

Chain Restaurant Web Service Based on Django **Aug.2019**

- Developed some applications like ordering food for client, editing employees' info for managers based on **MVC** architecture and interacted with UI through **jQuery Ajax HTTPs** based on **Django** framework**.**
- Deployed **MySQL** database to store and handle huge number of requests from users.
- Designed and implemented **front-end** website with **Bootstrap** web framework using **HTML**, **CSS**, and Django **template language**.

Interactive Blog Service Based on Tomcat framework and MySQL **Oct.2018-Dec.2018**

- Supported functions such as login, registration, posting blogs, posting and deleting comment, votes, search, etc., via **Servlet**, **JSP**, **JSTL**, **Databean**, **GenericDAO**, **MVC**.
- Developed an integrated frontend and backend system as an online blog service using **defensive techniques**.
- Decorated frontend UI using **CSS** framework of **Bootstrap**.

Big data Analytics with large dataset MapReduce **Sep. 2019**

- Pre-Processed Wikipedia **128G** large dataset using **test-driven** development technique.
- Automated deployment of **AWS EC2** and **EMR** cluster using **Terraform** script.
- Implemented robust and defensive programs based on **Apache Hadoop** to gain daily Wikipedia trending topics.
- Adopted Python data analysis library (**Pandas**) to solve data science problems progressively with interactive programming using **Jupyter Notebook**.