

**Zhi Zhang**  
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## **EDUCATION**

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**New York University** Sept.2019-Jun.2021  
Master of Science in Computer Science, GPA: 3.481/4.0

**University of Missouri-Columbia (MU)** Sept.2015-Jun.2019  
Bachelor of Science in Computer Science, GPA: 3.485/4.0 (2+2 Program in cooperation with TYUT)  
Taken graduate courses from fall 2018 to summer 2019  
Honors: Dean's Honor Roll in fall 2016; Bachelor of Science Cum Laude and Honors Scholar in fall 2017

**Taiyuan University of Technology (TYUT)** Sept.2013-Jun. 2018  
Bachelor of Engineering in Software Engineering, GPA: 3.64/4.0  
Honors: Second Grade Scholarship awarded by School of Software in fall 2013; Outstanding Volunteer in 2014

## **SKILLS**

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**Programming Languages:** JavaScript, Java, Python, PHP

**Back-end Frameworks:** Node.js, Java EE, Spark, Vaddin, Drupal 8

**Front-end Frameworks:** HTML/CSS, React, Redux, Vue, Bootstrap, Material-UI, jQuery, Ajax, Json, EJS

**Others:** Linux, Nginx, Apache, Unity3D, Git, Docker, Oracle, MATLAB, MySQL, MongoDB, Docker

## **RESEARCH ASSISTANTSHIP**

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**Plant Protein Phosphorylation Database Project, Digital Biology Lab** Aug.2021-Feb.2022

**Project Link:** <http://www.p3db.org>

- Participated in building a web resource portal for providing and analyzing protein phosphorylation data in plants for 45 species from ~260 in-vivo proteomic studies using Angular and MySQL
- Built protein sequence conservation analysis tools for inferring the importance of residues in a protein

**Computational Biology Team, Stowers Institute for Medical Research** Jun.2019-Sept.2019

- Developed independently a RNA-sequence data analysis module for differential gene expression analysis with various bioinformatics tools to organize and retrieve 21 lab experiment datasets, process user experiment request forms, and display laboratory data records, and streamlined lab processes by removing the need for manual processing / data entry
- Designed RESTful APIs in Express framework, used async/await to access data from 800+ files, and communicated with remote R shiny server to assist researchers in DiffExp/GO/Heatmaps analysis using different Fit model and FC/FDR cutoff parameters
- Created a responsive single-page application following material design guidelines to improve user experience and connected with LIMS to show more sample details for freeing analysts from repeated simple tasks

## **WORK EXPERIENCE**

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**Application Developer, ATFX Global** Feb.2022-Present

- Participated in developing InvestingCude mobile APP for collecting forex information and achieved real-time dynamic updates, built the mobile framework using React Native, and built the backend using Node.js and Firebase Realtime Database to realize cross-platform development
- Developed independently forex price tracking module of the forex analysis website, used Vue for frontend page building and dynamic rendering, captured remote data for asynchronous processing and visualized the results, and achieved real-time updates of trading prices and trading strategies
- Developed system push notification service API, used Firebase Cloud Messaging for remote push notifications in IOS and Android and realized price alert service based on user options

**Business Operations, University of Missouri** Jun.2016-Jan.2018

**Project Manager in Web Application Project in Drupal 8**

- Led 7 members to design and built 8 websites for 12 university departments including Human Resource Services, Police Department, etc., achieving 2000+ daily visits shown through Google Analytics and reducing the workload of MU Operation's IT department by 30% within 1 year
- Implemented agile development methodologies to distribute tasks and monitor work progress, and meet project timelines and budget

#### ***Java Developer in Java Web Application Project***

- Built, tested, and maintained 4 campus-wide web services, namely contract management, staff salary management, printing and mailing, and temporary staff management, using Vaadin7 Java Framework, following the MVP design pattern
- Collaborated with team to design database schema and used CallableStatement to execute the stored SQL procedure to efficiently insert user data and improve system execution speed, and authenticated users with lightweight directory access protocol (LDAP) to improve program security

### **ACADEMIC PROJECTS**

#### **COVID-19 Vaccination Sign-Up System** May 2021-Jun.2021

- Used MySQL and PHP to build a web-based system that allows people to sign up for COVID-19 vaccinations, enabling patients to sign up and choose their availability/time slot, and developed a user management system for both vaccine Providers and Patients
- Adopted Ford-Fulkerson algorithm to maximize the number of patients of the highest priority group that get an appointment offer for Maximum Bipartite Matching

#### **NYC Coronavirus Data Analysis** Apr.2020-Jun.2020

**Project Link:** [https://arczz.github.io/Nyc\\_Cov19\\_project/](https://arczz.github.io/Nyc_Cov19_project/)

- Tracked the current COVID-19 pandemic spread in NYC across the boroughs and zip codes using Spark, analyzed the relations between pandemic spread and its influential factors including age, income, and traffic by Spark Machine Learning
- Collected data with Python BeautifulSoup and built an interactive map of the COVID-19 spread cases by NYC zip code with D3.js for data visualization

#### **Artificial Intelligence Based Pac-Man Game** Oct.2019-Dec.2019

- Employed A\*, Hill Climber, Monte Carlo Tree Search (MCTS) and Genetic algorithms to train agent to find and eat food particles and avoid moving ghost (Pac-Man) in the maze

#### **Capstone Project: Amateur Radio Direction Finding (ARDF) Simulation** Sept.2016-Jun.2017

- Collaborated with other teammates in building a radio sport Virtual Simulation for athletic training using Unity3D and implemented multiplayer feature using Socket
- Customized and designed the UI interface and Head-up Display (HUD) of the simulation, and implemented game save and load features using MySQL for users to record their progress

#### **G2S (Genome to Structure) Web Service, Digital Biology Lab** Dec.2016-Mar.2017

**Project Link:** <https://g2s.genomenexus.org/>

- Participated in building RESTful Web Service to analyze the 3D structure of proteins by Java Spring and Maven, and generated API client libraries using Swagger for scientific computing
- Achieved the function of aligning users input protein sequence against the PDB sequences in the up-to-date database employing BLAST algorithm

### **EXTRACURRICULAR ACTIVITIES**

Volunteer of 2014 Taiyuan International Marathon Aug. 2014

Organizer of Outward Bound in Love Home of TYUT Jan. 2014