Yunhan Qiao

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4240 NW Duniway Dr, Corvallis, OR 97330

EDUCATION

Guangxi University of Science and Technology (GXUST), Liuzhou, China 09/2016-06/2020

- B. E. in Software Engineering

Southern Cross University (SCU), Gold Coast, Australia 09/2017-06/2020

- B. E. in Information Technology

Arizona State University (ASU), Tempe, Arizona 08/2021-05/2023

- M. S. in Software Engineering
- Advisor: Dr. Robert LiKamwa
- Thesis Title: "Networked System for Volumetric Athletic Coaching in Augmented Reality"

Oregon State University (OSU), Corvallis, Oregon 09/2023-present

- Ph.D. Student in Computer Science

INTERNSHIP EXPERIENCE

Mocha Software Co.,Ltd., Nanjing Branch 07/2020-09/2020

Position: Back-end Developer, R & D Department

Responsibilities:

- Integrated Spring, Springmvc, and Mybatis to develop a conference system for China Mobile Migu Culture & Technology Group;
- Employed Git and Gitlab to track the development process of the program; employed Maven throughout the general management process of the program;
- Adopted Ajax to accelerate web page's rendering speed from 1 second to 0.5 seconds;
- Alleviated the workload of the search engine by replacing the traditional SQL sentence search with dynamic SQL search, and applying Redis to store the dialogue of SSO user;
- Improved the system's efficiency after reducing the administrator's logging speed to 0.1 seconds

RESEARCH EXPERIENCE

Quantum Computing for Simple Assembly Line Balancing (SALB) Problem 07/2022-09/2022

Supervisor: Dr. Javier Gonzalez-Sanchez

Research tools and methods: D-Wave quantum computer, python

Responsibilities:

- Built Quadratic Unconstrained Binary Optimization (QUBO) for SALB problem;
- Used D-Wave hybrid solver to optimize the objective function of SALB problem

Multiplayer Coaching based on Virtual Reality 09/2022-05/2023

Supervisor: Dr. Robert LiKamWa

Research tools and methods: Unity3D, Kinect, C#

Responsibilities:

- Used multiple Kinects to do the motion capture of athletes;
- Programmed player and coach using unity3d and c#

Automatically Testing Correctness of Heterogeneous High-Performance Computing Applications. 07/2023-present

Supervisor: Dr. Manish Motwani

Research tools and Methods: GPT, AFL++, LAMMPS, Python

Responsibilities:

- Used GPT-3.5 model to generate initial seed inputs of LAMMPS.
- Created custom mutator of AFL++ to fuzz the initial seed inputs.

Fuzzing-Based Approach of Certificate Authority 10/2023-present

Supervisor: Dr. Manish Motwani (OSU), Dr. Zane Ma (OSU)

Research tools and methods: AFL++, go-fuzz, Boulder, RFC x509

- Created custom mutator of fuzzer to fuzz the Certificate Signing Request based on RFC x509.

PROJECT EXPERIENCE

Machine Learning for Breast Cancer Detection 10/2020-12/2020

Supervisor: Professor Mark Vogelsberger

Research tools and methods: CNN (Convolutional Neural Networks) Machine Learning Algorithm, PyCharm, SVM, TensorflowTTS

Responsibilities:

- Classified and tested the dataset with the support of Scikit-learn;
- Trained machine learning model through the application of SVM;
- Operated TensorflowTTS to realize intelligent speech interaction with the detection program user, which accelerated the model training and improved the accuracy rate of breast cancer prediction to 96%

Android Mobile Application Development Based on GPRS Position Technology, GXUST 05/2018-05/2020

Research tools and methods: Android Studio, Keil c51, GRPS Chip, JDBC

Responsibilities:

- Designed a multi-layer structure (i.e., presentation layer, business logic layer, and data access layer) to upgrade the software system's layout, expansion, and maintenance;
- Implemented the design of software structure by assembling different functional modules;
- Accelerated the speed of software transmission (peak value: 171.2kbit/s) to improve the accuracy of GRPS positioning

Soccer Website Development Based on Taiga, ASU 08/2021-12/2021

Development tools and methods: Taiga, Git, Spring, PostgreSQL, Hibernate, Heroku, IntelliJ

Responsibilities:

- Designed relational database to store data;
- Made Junit test for each module to make sure it runs well;
- Used JWT to authenticate user identity

AWARDS

Merit Scholarship (GXUST) 09/2018-09/2019

Research Assistant (OSU) 09/2023-present

COMPUTER SKILLS

Programming: Java, HTML, CSS, JavaScript, C, Python, MySQL, C++, C#

Framework: Spring MVC, Spring, Mybatis, Flask

Software: Android Studio, Keil c5, IntelliJ, PyCharm, Unity, GPT

COURSES

Professional: Data Structure and Algorithm, Software Engineering for Machine Learning, Embedded C Programming, Internet of Things, Object-Oriented Technology, Operating System, Foundation of Software Engineering

Mathematics: Calculus, Linear algebra, Statistics