Yichao Xu

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Education

2019.09-2020.11 UCL (University College London) （Master Degree） System Software Enginerin...

Score Ranking: top 10%
GPA: 4.0
Major Courses: Requirements Engineering and Software Architecture; Software Abstractions and Systems Integration; Validation and Verification; Computer Security; Tools and Environments; Distributed Systems and Security

2017.09-2019.06 University of Liverpool （Bachelor Degree） Software Development

Score Ranking: top 10%
GPA: 3.9
Major Courses: Database Development; Software Engineering; Software Development Tools; Advanced Object Oriented Languages; Computer Networks; Distributed Systems

2015.09-2017.06 Xi'an Jiaotong Liverpool University （Bachelor Degree） Information and Compute...

Score Ranking: top 10%
GPA: 3.6
Major Courses: Computer Systems; Data Structures and Algorithms; Foundations of Computer Science; Introduction of Algorithms;

Campus Practice

2020.03-2020.06 **A tools for GitHub repository Mining based on Python** **Developer**

In that project, I implemented a terminal tool based on Python, and there are about five thousands lines of codes. It can identify each commit's changes from the Github repositories and then analyse co-changed relationships between the functions and tests.
I used the following techniques and frameworks in the tool: PyDriller (Mining the Github repositories), GumTree and Subprocess module (Invoking the Java program for classifying changes in commits), Python's data analysis modules (Handling the CSV file, analysing and visualising data), APRIORI algorithm (finding out the association between tests and functions).
I used the tool to evaluate the tests maintenance approach in six GitHub repositories. I optimise the CoEv strategy for establishing "test-to-code traceability links" according to the results of experiments. The precision of the strategy increased to 30%. The tool can be founded from the link "https://github.com/aooXu/comp0110_project_tools"

2019.11-2020.04

Android package to predict the health status — **Android Developer**

In that project, I used Kotlin to implement an Android framework, and I contributed about ten thousands lines of codes. The framework can upload sensitive data for training the global model and download the model for health score predicting.
I used the following techniques and frameworks: Kotlin and MVVM (Ensuring the usability of the framework), Retrofit2 and WorkerManager (Uploading data and scheduling the upload), Tensorflow-Lite (Implementing the local machine learning), SQLite (Storing the machine learning model and sensitive data), Asynchronous encryption and data noise (Avoid the data abusing and eavesdropping).
I did the code review with "CarefulAI", A software development company from the UK. They accepted all functionalities, and the framework may be used in the NHSX project in the future.
The codes of the framework can be founded from the link "https://github.com/aunroel/nhs_app/tree/android_branch/Android"

Work Experience

2020.11-2021.02

China Academy of Industrial Internet — **IT Intern**

Industry: Academy

In CAII, I worked with Dr He on a project about commercial explosives. I mainly focused on the framework design for a platform that makes the government be able to monitor the manufacture, usage and distribution of explosives.
In the design, I imported the Hyperledge Fabric to make all data immutable and used the private data set to protect the business secret.
The CAII accepted the my system design.

Academic

2020.03-2020.06

Mining repositories to establish the test-to-code links — **Researcher**

In the project, I mined GitHub repositories of six open-source Java projects. The results demonstrated the tests maintenance approaches of the developers.
Based on these data, I optimised the classical CoEv strategy by the cocreation and coevolution relationship between the tests and functions codes.
After that, I evaluated its precision on the other three java repositories, and the final result showed that the optimisations improve the precision by thirty per-cent.

2017.07-2017.09

Analysing the DoS attacks to IoT system — **Researcher**

In the project, I worked with the teammates to test an IoT system's performance under three different DoS attacks.
I used pressure test tools such as Ping3 and Hunk to launch the DoS attacks and modified the sources codes of the LOIC to customise the frequency and size of the attack packages. The results were collected by a Python program and Wireshark automatically.
We released a paper, "A Denial of Services Attack for IoT system", on the Sciences and Wealth.

Award

2018.07 — 2018 BOSCH CHINA IoT HACKATHON R OUSTANDING ACHIEVEMENT

2019.06 — Faculty of Science and Engineering Degree of Bachelor of Science with Honours

2016.03 — Certificate of Outstanding Achievement On ROBOTICS COMPETITION in XJTLU

Skill/Language

IELTS :
7.0

Production

A tools for GitHub repository Mining

https://github.com/aooXu/comp0110_project_tools

It is a terminal tool based on Python, which can identify each commit's changes from the Github repositories and then analyse co-changed relationships between the functions and tests.

Android package to predict the health status

https://github.com/aunroel/nhs_app/tree/android_branch/Android

The framework can upload sensitive data for training the global model and download the model for health score predicting.

Interest

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