

Liu Qing

(+86)198-0119-2163

liuqing@ios.ac.cn

Education

Chinese Academy of Sciences University, *M.S* in Software Engineering Jan.2022 - Sept. 2018

- ◆ GPA: 3.36 Relevant Courses: Computer algorithm, Software engineering, Big Data system, Mathematical logic
- ◆ Award: Second Academic scholarship, in 2018-2019 Academic year

Dalian University of Technology, *B.E* in Software Engineering July.2017 - Sept. 2013

- ◆ Score: 83.21 (ranking 20%) Relevant Courses: Data structure, Database, Computer network, Operating system
- ◆ Award: Excellent volunteer, in 2015-2016 Academic year

Academic Projects

Developing a Detecting Tool of ‘Defects of AsyncTask’ May. - Aug. 2020

- ◆ **Task:** Proposed a method of analysis and detection of the ‘defects of Android asynchronous’, and implemented an automatic detection tool. The tool can detect memory leaks, program crashes, etc. caused by specific programming patterns, and can detect defects in a large number of real-world applications in batch.
- ◆ **Action:** Tool modules include: instrumentation module, defect trigger module, log collection and classification module, execution path extraction module, log analysis module and result confirmation module. Proposed an algorithm for extracting dynamic execution paths based on log information converting linear execution path log information into a tree-type function call graph.
- ◆ **Result:** The tool defines ten defect patterns of AsyncTask. The tool can detect the open-source and real-world apps. Compared with other static analysis tools, the results of this tool reduce false positives, and it can confirm the correctness of the results of static analysis tools.

Developing a Testing Tool of ‘ICC’s Robustness’ Nov.2019- Jan. 2020

- ◆ **Task:** Proposed a method for testing robustness of ICC based on fuzzing, and implemented an automatic testing tool.
- ◆ **Action:** Tool modules include: static analysis of APK Manifest files to obtain component information, construction of intent fuzzing test cases, send test cases to target components, use of Logcat to detect log information.
- ◆ **Result:** The tool can detect 19 kinds of abnormal communications between Android components.

Development of ‘GraphLite - JanusGraph Connector’ Apr. - July. 2019

- ◆ **Task:** Designed interface ‘InputFormat’ for GraphLite (asynchronous graph computing system based on vertex programming model) to read graph data of JanusGraph (distributed graph database system) for GraphLite computing.
- ◆ **Action:** Take GraphLite as a client and send the request to Gremlin Server engine of JanusGraph through WebSocket and HTTP, obtain JSON format data, and divide many tasks to each worker through the hash partition.

Working Experience

JD.com, Android Development Engineer Jan. - Mar. 2021

- ◆ **Task:** Learned the project architecture and source code of the "Extreme version of JD app"; understood the process of development and deployment.
- ◆ **Result:** Understood the interaction and workflow between the modules according to the business flow chart of the project; read the source code of the "Task Center" module to understand the specific business implementation methods; learned the slimming strategy of apps in actual business;

Paper

- ◆ Chi Lin, Zihao Song, Qing Liu, Weifeng Sun, Guowei Wu. Protecting Privacy for Big Data in Body Sensor Networks: A Differential Privacy Approach. CollaborateCom 2015: 163-172.
- ◆ Lin Q, Wu G, Liu Q. EDP: A Wireless Network Control System Energy-Efficient Real-Time Task Scheduling Algorithm[C]. BWCCA, IEEE, 2016.

Technical Skills

- ◆ Technical Skills: Java, Soot frame, Monkey tool, Android development, Log analysis, Hadoop, HBase.