Kai Cao

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Education

2012.9-2016.3 **M.E. in Computer Science**, *Shanghai Jiao Tong University*.

2008.9-2012.6 **B.E. in Software Engineering**, *Soochow University*.

Community

github **github.com/ck89119**.

Project Experience

2015.4-2015.11 **Test Suite**, *Shell, Python*, CooTek.

It is a full test suite for CooTek keyboard engine on Linux platform. Our engine seperates western languages and Chinese apart in function, so this test suite has two parts as well.
My contributions in western language(English, French, German and so on, about 11 languages in total) part,
1.Wrote scripts to generate correction-test cases from user input data which was collected by my teammate.
2.Wrote scripts to generate exact-word-test cases for every unigram/bigram/trigram in our dictionaries.
3.Automatized western language test part and integrated it into test suite.
My contributions in Chinese(Pinyin, Zhuyin, Cangjie, Bihua and Wubi) part,
1.Wrote scripts to generate exact-word-test cases for every word in our dictionaries.
2.Integrated scripts which were used for testing average rank, first rank percentage and sentence percentage.
3.Automatized Chinese test part and integrated it into test suite.

2015.4-2015.11 **Performance Test in an Android app**, *Java, Android*, CooTek.

In order to simulate the real condition, we wrote an Android app for testing. My contributions,
1.Wrote a time testing module and a series derivative testing modules.

2014.7–2014.8 **Opcode Counting**, *Dalvik VM, Android*, Intern, Alibaba.

The purpose of this project was to count the times each opcode is called when an Android app runs. My contributions,
1.Designed the whole architecture.
2.Determined the counting timing and the position of counting field.
3.Figured out the idea, switching to ALT-mode forcely, to optimize counting process.
4.Output the counting result by exploiting USER_SIGNAL.

2012.9–2015.3 **LoCCS Power Analysis Platform**, *JNA, Side Channel Attack(SCA)*, Research.
This project was a part of National '973' Project in Lab of Cryptology and Computer Security (LoCCS). This platform was designed to cover all operations during an SCA. My contributions,
1.Designed the origin UI of the software and implemented it in Java.
2.Tested JNA and JNI for Java calling C++ libraries.
3.Wrote a series of analytic modules of DES algorithm, e.g. CorrelationAnalysis, KnownKeyAnalysis, SecondOrderAnalysis.

2011.12–2012.5 **Research on constructing a binary tree efficiently**, *Algorithm*, Research.
This was my graduation project for undergraduate study. The purpose of this project was to find efficient algorithms that could construct a binary tree from the two kinds of traversal sequence and information of each node. My contributions,
1.Found a constructing algorithm from postorder traversal and the first child of each node.
2.Found a constructing algorithm from postorder traversal and nextsibling of each node.
3.Created random binary trees(about 5000 nodes) for testing.

Skills

Language	C/C++, Java, Python, Shell, Haskell(little)
OS	Windows, Linux, OS X(daily-work)
Version control	Git, Svn
Android	VM, Java Dev
Other	Algorithm/Data Structure(enthusiastic), Vimer∼