# Kai Cao

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## Education

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| 2012.9-2015.3 | **M.E. in Computer Science**, *Shanghai Jiaotong University*. |
| 2008.9-2012.6 | **B.E. in Software Engineering**, *Soochow University*. |

## Internship

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

## Project Experience

**2012.9–Present** · **LoCCS Power Analysis Platform**, *JNA, Side Channel Attack(SCA)*, Research Project.

This project is a part of National '973' Project in Lab of Cryptology and Computer Security (LoCCS). This platform is designed to cover all operations during an SCA. My contributions,
1.Design the origin UI of the software and implement it in Java.
2.Test JNA and JNI for Java calling C++ libraries.
3.Write a series of analytic modules of DES algorithm, e.g. CorrelationAnalysis, KnownKey-Analysis, SecondOrderAnalysis.

**2011.12–2012.5** · **Research on constructing a binary tree efficiently**, *Algorithm*, Research Project.

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

## Awards

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| 2012 | **Second Grade Scholarship for Graduates of Shanghai Jiaotong University**. |
| 2010 | **Second Place in Programming Competition of Soochow University**. |
| 2009 | **Honor Reward of ACM/ICPC Asian Regional in Wuhan**. |
| 2009 | **First Grade Scholarship of Soochow University**. |
| 2009 | **Zhu Jingwen Scholarship**. |
| 2007 | **Second Prize in National Olympiad in Informatics in Provinces**. |

## Skills

C/C++(6 years), Java(familiar), Python(familiar), Shell(familiar), Git(familiar), Algorithm(enthusiastic), Linux/Unix/Mac(daily-work), Vimer~

## Self-assessment

I have huge passion for coding, math and algorithm, and I believe my programming skills will make our lives better and more convenient in the future. I have a very low laugh-point:) and I can work well under pressure. At the same time, I am a good team player and have great communication skills. I would greatly appreciate the chance to work at your company.