

Bowen Cai

www.caibowen.com bowen.cai@tamu.edu

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College Station, 77840, TX
Mobile: 979-985-6333

Education

- Master in Computer Science**, Texas A&M University, U.S.A. Jan 2016 – May 2018
GPA: 3.38. Advisor: Dr. Jeff Huang. (expected)
- B.E. in Computer Science**, Northwestern Polytechnical University, P.R. China Sept 2011 – Jun 2015
GPA: 84/100, top 10%, graduated First Class.
- Exchange student** at the Delft University of Technology, the Netherlands. Oct 2014 – Mar 2015

Skills

Proficient in **Scala**, **C++**; good at **Python**, **C#**; experienced in **JavaScript**, **Ruby**, **PHP**.
Work experience with **MySQL**, **Java EE**, and **HTML5**.
Experience in **compiler** techniques and **LLVM**, **GTest**, **TestNG**, **cryptography**, **network programming**.
Experience in client-side development with **Qt**, **Swing**, **Android**.

Experience

- Research Assistant**, Parasol Lab, Texas A&M. Program Analysis. Jan 2016 – Jun 2017
- Shiyu Huang, **Bowen Cai**, Jeff Huang. Towards Production-Run Heisenbugs Reproduction on Commercial Hardware. **USENIX ATC2017**. Acceptance Rate: 21% (60/283). Developed Ball-Larus path profiling on LLVM.
 - **Bowen Cai**. Code Parallelization through Sequential Code Search. Student Research Competition, **ICSE 2016**. Implemented a prototype source code search engine (Github CodeSniffer)
 - Developed a novel redundant event filtering technique for ThreadSanitizer tested on Chromium (Github Tree-CPP).
 - Research on predicting concurrent use-after-free bugs, including a program tracer (build on LLVM Compiler-RT), and an offline analyzer (predict bugs from execution traces); find bugs on MySQL and PHP.
 - Advanced Compiler Design Course: developed many source code optimization algorithms for Fortran-77.
- Internship at **Alibaba-Inc**, Hangzhou, China. Backend Java developer. July – Oct 2014
- Adopted new libraries to Wangqi 2.0; reimplemented anti-phishing functions.
 - In WangXin 3.0 (50M users), implemented backend functions for Dese commenting and voting; developed micro service for Dese; designed and implemented admin web console.
- Internship at **Zhuoyuan InfoTech**, Xi'an, China. Frontend developer. Jul – Aug 2013
- In an enterprise integration project, presented and synced data using ExtJS and Spring MVC.
- C++ developer at **RoboCup 3D Simulation Team**, College Innovation Center, China Aug – Jan 2013
- Developed new motion algorithm on Simspark emulator, improved robot's speed and stability.

Side Projects

- Program runtime monitor and analyze (PRMA, fall 2014): a distributed logging backend for monitoring application servers and localizing bugs, implemented in Scala with AKKA (github.com/xkommando/PRMA).
- Slingshot: an interpreted functional language implemented in C# (github.com/xkommando/Slingshot).
- eBay-like C2C site (Spring 2014): as the leader of a 13-man team, we developed a complete online C2C shopping website, including searching, transaction, advertising, and admin consoles for seller/buyer (Github C1_ParknShop).
- Gplume (Fall 2013): designed and implemented a Java/Scala web framework (pay homage to Springframework), it supports dependency injection, JSP, JSON, JDBC, Web MVC, etc. Several websites were built using my framework (github.com/xkommando/Gplume).