Bowen Cai

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Chinese with F1 Visa
Texas A&M University, College Station
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Education

Master of Computer Science, Texas A&M University, U.S.A.   Jan 2016 – Dec 2017
   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

- Shiyou 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 Browser and PARSEC benchmark suit (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); experimented on MySQL and Chrome.
- Advanced Compiler Design Course: data-flow analyze and source code optimization 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.

Projects

- Program runtime monitor and analyze (PRMA): 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).