

## SUMMARY OF QUALIFICATIONS

- Proven strong problem solving ability in industry software development
- 11 years of track record of delivering results on time exceeding expectations
- Self-motivated with minimum supervision required

## PROFESSIONAL EXPERIENCES

**School of Computing, University of Utah** Graduate Research Assistant 2006---present

**Research focus:** random testing of compilers. Pioneered a systematic approach to generate random test cases, find software bugs, reduce the test cases, and report bugs automatically.

- Design and implement a random C program generator supporting common C language features using C++
- Augment the random generator with a static analyzer to avoid invalid code such as undefined behaviors
- Create an automatic test case reduction tool using Perl to reduce failure inducing random programs
- Reported 300+ bugs in the most trust worthy compilers, including both open source compilers (GCC/LLVM) and industrial strength compilers (ICC/SunCC/etc)
- Helped the compiler developers to fix these bugs, resulting in more reliable compilers that are beneficiary to the software development community
- Implemented a compiler for mini-Java language covering the complete compilation process from parsing and lexing to code emission in MIPS assembly language
- Enhanced an open source compiler (GCC) to compile embedded applications into executables that utilize on average 20% less RAM

**Synopsys, Mountain View, CA** Senior R & D Engineer 1999---2005

- Designed and implemented graphic user interface for a FPGA synthesis tool using Visual C++ and ported the application to Unix using MainWin
- Cooperated with the synthesis team to design backend APIs, and devised mechanisms to expose APIs to users
- Invented a “Design Wizard” that helped novice users to get up to speed

**Sycon Design, Sunnyvale, CA** Software Engineer 1998---1999

- Empowered a physical synthesis tool with a powerful and flexible graphic user interface within six months to beat the deadline to demo the product in a conference
- Awarded DWIT prize for enabling a timely launch of the product
- Achieved a speedup of 3X on graphic operations using optimized algorithms

## SKILLS

**Software:** Compiler Optimizations, Program Analysis, Visual Studio, Linux/Unix Programming, CodeWarrior, Database Systems, OOP, Static Analysis, Embedded Applications, GUI, Bugzilla, SVN, ClearCase, LaTeX

**Languages:** C/C++, Java, Perl, MATLAB, SQL

## SELECTED PUBLICATIONS:

- Finding and Understanding Bugs in C Compilers, ACM SIGPLAN conference on Programming Language Design and Implementation 2011
- Eliminating the call stack to save RAM, ACM SIGPLAN conference on Languages, compilers, and tools for embedded systems 2009

## EDUCATION

<b>University of Utah, Salt Lake City</b>	PhD in Computer Science	GPA 3.8/4.0	2006---2011
<b>University of Rochester, Rochester</b>	MS in Computer Science	GPA 4.0/4.0	1995---1998
<b>Tsinghua University, Beijing, China</b>	BS in Biology	GPA 3.5/4.0	1989---1994

## HONOR MEMBERSHIP

Golden Key International Society, American Mensa