Qiyu Zhu .com
algorithms consultant

email address on web site ✉

Education

Computer Science & Mathematics at the **University of Toronto**, Canada,
Honours Bachelor of Science, GPA 3.88 of 4, with high distinction, June 2012.

Technical skills

Java · Python · C/C++ · x86 asm · Git · SVN · HTML5 · JavaScript · CSS · SQL · Javadoc · Linux command line · Eclipse IDE · LaTeX · Algorithms · Data structures · Refactoring

---

Work experience

Developer in Bitcoin cryptography ***Freelance consultant*** *Oct 2014 – Present (2016)*

For a specific client's project, I:

- Developed Bitcoin transaction processing software in Java
- Implemented low-level cryptographic primitives and network protocol messages
- Optimized computations for speed in an embedded C++ environment
- Debugged mathematics and code logic, also added defensive checks
- Created test suites to assure quality and correctness

Software engineer in video DSP ***Qualcomm (Canada)*** *Jun 2012 – Sep 2014*

Overview of my role:

- Developed video enhancement techniques on the Qualcomm HQV product team
- Wrote algorithms to process raster images at the pixel level: e.g. image scaling, dithering, distortion assessment
- Technologies: C++, Python, Subversion (SVN), digital signal processing, Linux shell

Job responsibilities:

- Debugged software models and drivers, cleaned up and simplified existing code
- Designed software framework for modeling hardware function blocks
- Evaluated picture quality subjectively and reported observations
- Tutored coworkers on how to use SVN version control tool
- Assisted ASIC design verification (DV) engineers' workflow (setup, debugging, etc.)
- Accelerated DSP calculations via CPU vectorization and OpenGL GPU computation

Proofreader in technical English ***Freelance consultant*** *Jan–Feb 2016*

For a client, I edited a ~150-page book on the topic of engineering management. Improved the word choice, punctuation, grammar, and sentence flow. Researched subtle distinctions in word usage, used tools like Google Ngram Viewer. Wrote comments to explain and justify my edits.

Intern software developer in Java ***IBM (Canada)*** *May–Aug 2010*

- Worked on testing and extending IBM graphical debugger software products
- Implemented new GUI view for Eclipse Parallel Tools Platform debugger project – wrote Java code to implement underlying data model, worked with Eclipse APIs
- Performed some manual testing and created/updated test case scenarios

Student Java/Eclipse software developer ***University of Toronto*** *May–Aug 2009*

Implemented a system for specifying and checking software model constraints, for the Model Management Tool Framework project. (The goal of MMTF is to create conceptual models, make associations between models, and derive new models from existing ones.) Worked in pure Java and used Eclipse APIs. Supervised by Professor Marsha Chechik.

Student web software developer ***Google Summer of Code*** *May–Aug 2008*

Redesigned parts of the DrProject software's web user interface, then successfully implemented the changes. I worked iteratively between designing, prototyping, and user-testing in order to streamline the DrProject administration workflow. I used these tools/technologies: Python, JavaScript, HTML, Firebug, Ajax, Dojo JS toolkit, Subversion (SVN). "Google Summer of Code" is a program where Google sponsors open-source organizations (e.g. Python Software Foundation) to hire students for open-source projects. Mentored by Professor Greg Wilson at the University of Toronto.

Contests & awards

Award	Details
2nd place	ACM-ICPC ECNA regional programming contest, October 2011
Participant	ACM-ICPC World Finals, May 2012. There were 112 worldwide universities competing
Dean's List Scholar ×3	U Toronto, years 2009–2011. Awarded for GPA > 3.5, earned by the top 10% of students
Bronze medalist ×2	International Olympiad in Informatics (IOI), Poland 2005 & Mexico 2006
Gold medalist ×2	Canadian Computing Competition (CCC) Stage Two, University of Waterloo, 2005 & 2006

Languages

- English: native, 20 years experience
- Chinese: basic, Cantonese & Mandarin
- Japanese: basic, JLPT N4 certified

Résumé updated: Feb 17, 2016