

# Xixiang Chen

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## EDUCATION

**Duke University**, Durham, NC

May 2019

*Master of Science in Computer Science*

- GPA: 3.76/4.00

**University of British Columbia**, Vancouver, BC

May 2014

*Bachelor of Science in Computer Science*

- GPA: 3.70/4.00
- Honors & Awards: Dean's List, Graduation with Distinction

## WORK EXPERIENCE

**Software Engineer, CISDI**, Chongqing, China

Sept 2014 — June 2017

- Developed an in-house inventory management system for construction industry. Responsible for database schema and system architecture design, back-end implementation with Java Web services, and front-end implementation using JavaScript with jQuery library.
- Developed a customized resource planning solution for our manufacturer client. Responsible for communicating with the client representatives, back-end and graphical front-end development using WebGL library.
- Worked close with 2 other development groups to deploy Oracle E-Business Suite for customers. Collected and analyzed requirements from client representatives; implemented customized features extended from the E-Business Suite; improved and integrated the resource management system mentioned above with the E-Business Suite.
- Worked on a web-based ERP system integrated with our client's existing system. Developed APIs that enabled data communication between the two systems.
- led a team of 4 developers, responsible for estimating total workload, planning daily schedules for each member, dispatching weekly tasks to our developers, and reporting daily/weekly to our production manager.

## PROJECT EXPERIENCE

**Natural Language Interface to Databases**

- Developed a web application using Java Spring framework that allows users to translate English sentences into SQL queries and returns the desired result sets.
- Implemented a linguistic parsing algorithm that takes English sentence as input and constructs a hierarchical query tree that can be further reduced and turned into valid PostgreSQL query.
- Designed and implemented the front-end program utilizing React and Node.js.

**CPU Instruction Branch Prediction**

- Simulated the Two-Level Adaptive Training branch predictor and the TAGE branch predictor in C language.
- Improved and evaluated the TAGE branch predictor under small storage budget (8KB) and achieved below 7 misprediction/1k instructions utilizing both the address of branches and the branch history.

**MIPS Compiler for Tiger Language**

- Built a compiler from scratch in Standard ML that runs with MIPS instruction sets for the Tiger Language.
- Implemented the instruction selection, parser, type checking, liveness and register allocation modules. Implemented spilling that allows more variables on limited number of registers and integrated all modules in the end.

## ADDITIONAL SKILLS

- Programming skills: SQL, JavaScript, HTML, CSS, Java, Python, and C++.
- Systems: experience with Oracle database, MongoDB, and general database design.
- Others: machine learning, computer graphics, computer vision and computer architecture.