

Lei ZHANG

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EDUCATION

- **Zhejiang University, China** Hangzhou, China
Bachelor of Science in Computer Science Sept. 2012 – July. 2016
- **Arizona State University, United States** AZ, US
Master of Software Engineering Aug. 2017 – May. 2019(expected)

EXPERIENCE

- **VADER Lab** Arizona State University
Graduate Research Assistant Aug 2017 - present
 - **Visualization of Ecological Protected Area:**
 - * A recently started project to visualize the value of regions between protected areas.
 - * Work on preprocessing data to generate tiles of different zoom levels of the map.
- **SeSaMe Lab** National University of Singapore
Internship Researcher Aug 2016 - Jun 2017
 - **Trajectory Trend Visualization:**
 - * Implement a trajectory visualization system focusing on display flow changes.
 - * Develop a front-end using heatmap, radar chart, and chord-like diagrams to visualize the result.
 - * Implement back-end server using GPGPU to process data fast.
- **CAD&CG National Key Lab** Zhejiang University, China
Student Research Assistant May 2015 - June 2016
 - **3D Meteorological Data Visualization System:**
 - * Worked with two researchers to build a visualization system to display some meteorological data like temperature, wind, humidity material on the earth in a 3-dimension way.
 - * My job in this program is writing UI, making rendering logic better, and change features by discussing with users.
 - **High-Resolution Meteorological Data Visualization System:**
 - * Worked in a group of three to implement a system in displaying the meteorological data on a multi-screen and high-resolution hardware cluster.
 - * My job is to solve the synchrony problem among the displays and refactor the previous codes of meteorological data visualization.

COURSE PROJECTS

- **Simple Pascal Compiler (Spring Semester 2016):**
A compiler of Pascal language to check lexical, syntactical errors.
- **HTTP Protocol Imitation Program with Encryption and Signature (Spring Semester 2015):**
In this project, I implement get and post functions according to standard HTTP prototype. Also, I add DES algorithm to encode and RSA algorithm to make a digital signature to transfer data.
- **MIPS Assembler (Fall Semester 2014):**
A command line assembler to translate the assembly language like MIPS to machine codes. It's developed for assembling the following system on FPGA.
- **FPGA Chinese Character Display System Using Self-designed Instruction Set (Fall Semester 2014):**
Self-design instruction set (imitate the MIPS instruction set) and a logic circuit. Self-design memory structure and file system. Implement a system to display Chinese character on LED screen. 16 bits are used as the smallest unit just like 8 bits as a byte in a conventional system.
- **Simple Database System (Fall Semester 2014):**
A command line program to imitate MYSQL which implements functions such as select operation, find operation, adding an index, etc.
- **Chinese Chess Game (Spring Semester 2013):**
A Chinese Chess game developed in Turbo C on Dos environment. Supporting illegal movement check and victory determine. Also, game saving and backtrack are available.

PROGRAMMING SKILLS

- **Languages:** : C, C++, Java, JavaScript, HTML, CSS, Python, GLSL, SQL, PASCAL, Assembly Language(X86, MIPS)
- **Technologies:** : CUDA Programming, OpenGL, MYSQL and MongoDB, Embedded System programming, Parallel Computing, QT, Bootstrap framework