

# QIANG ZHANG

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[github.com/vegito2002](https://github.com/vegito2002) [www.linkedin.com/in/qiang-zhang-855615117](https://www.linkedin.com/in/qiang-zhang-855615117)

## Education

### Johns Hopkins University

Master of Science in Engineering (M.S.E.) in Computer Science *GPA: 3.75/4.00*

Baltimore, MD

Sept. 2016 - May 2018

### Southeast University

B.E. in Measuring Control Technology & Instruments *GPA: 3.1/4.0*

Nanjing, China

Aug. 2007 - Jun. 2011

## Experience

### Nanjing Institute of Measurement And Testing Technology

*Calibrating Engineer*

2012 - 2014

Nanjing, China

- Legally binding calibration and certification for over 8000 pieces of academic or industrial instruments.
- Automated workflow for the department resulting in significant productivity gain, and won Annual Best 10 Employee (out of 200+) of year 2013, an unprecedented achievement for a second year.

### Lab of Dr. Xu Li of Southeast University

*Part-time Research Assistant*

2012 - 2013

Nanjing, China

- Made recognized contribution to project: Truck & Train Motile Property Testing System.

## Project Highlights [github.com/vegito2002](https://github.com/vegito2002)

### Survival Maps

Team: Guoye Zhang, **Qiang Zhang**, Neha Kulkarni, Channing Kimble-Brown, Jeana Yee

*Bootstrap JavaSpark TravisCI Maven Heroku iOS sql2o JUnit SQLite MVC MapQuest RESTful Swift* 2016, Baltimore, MD

- Large-scale course project of OOSE where we, out of real-life need, built a navigation app that cares about security no less than speed, during a fully fleshed multi-iteration life-cycle: requirement analysis, design, implementation, testing and deployment.
- Innovative features: crime heatmap, routing security preference, sensitivity to crime threat of different time of a day etc.
- Solely responsible for UML design; significant participation in back-end server design and implementation; primarily responsible for backend data processing and data source updating component.
- Designed a recursive algorithm to integrate inconsistent traffic data and crime data from different sources.

### Multi Diff

*diff Algorithm HTML MinHash Maven ZIMPL Java*

Team: Guoye Zhang, **Qiang Zhang**

2017, Baltimore, MD

- We re-assess the legacy utility **diff** and augment it with domain-specific new feature and algorithmic enhancement.
- Developed new algorithm **BetterDiff** that intelligently retain bracket pairing while calculating edit distance.
- Enhanced the system to be able to track editing ancestry in large hierarchially structured multi-file system, producing standard **diff** patch files as well as intuitive side-by-side visualization.

### HMM EM Tagger

*NLP Tagger Supervised-Learning Semi-Supervised-Learning HMM EM Java*

Myself

2017, Baltimore, MD

- Compact implementation of a Hidden Markov model based tagger that can do not only supervised learning with viterbi decoding and posterior decoding, but also semi-supervised learning with expectation-maximization algorithm.
- Innovative optimization of word-similarity based tag dictionary pruning that speeds the tagger up by 50%-80% depending on task.

### Padding Oracle Attack Demo

*Cryptography Security HMAC SHA AES-CBC Go*

Myself

2017, Baltimore, MD

- Down from scratch Golang implementation of a typical padding oracle attack process. Includes both an authenticated encryption component and the adversary component, with almost everything manually implemented down to the integer.

## Technical Skills (in order of nonascending proficiency)

### Languages

Java, Go, C, Python, SQL, Ocaml, Swift, Prolog, JavaScript, jQuery

### Frameworks & Platforms

JavaSpark, Flask

### Tools

Git, Sublime Text, LATEX, Linux, shell, Microsoft Office, IntelliJ IDEA, MySQL

## Coursework Highlights (Graduate Level)

Algorithms

Object Oriented Software Engineering (OOSE)

Databases

Computer Networks

Principles of Programming Language

Declarative Methods

Natural Language Processing

Practical Cryptographic Systems

Operating Systems

Machine Learning (in progress)