


# 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: 3.78/4.00*

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

*Calibration 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 SQLite MVC MapQuest RESTful Git Swift* 2016, Baltimore, MD

- Fully-fleshed OOSE project where our team, out of real-life concerns for the JHU community, built a navigation app that cares about security no less than efficiency, during a complete multi-iteration life-cycle: requirement analysis, system design, implementation, testing and deployment.
- Innovative features: crime heatmap, routing security preference, sensitivity to crime threat of different time of a day etc.
- Significant participation in architecture design, back-end server design and implementation. Primarily responsible for backend data retrieving, processing and integration.
- Designed a recursive algorithm to accommodate incompatible traffic data and crime data from different sources.

### Multi Diff

*diff Algorithm HTML MinHash Maven Git ZIMPL Java*

Team: Guoye Zhang, **Qiang Zhang**

2017, Baltimore, MD

- Developed a new version of **diff** that intelligently retain bracket pairing while calculating edit distance.
- Enhanced system to track editing ancestry in hierarchially structured multi-file system, producing standard **diff** patch file output as well as intuitive side-by-side HTML visualization.

### HMM EM Tagger

*NLP Tagger Supervised-Learning Semi-Supervised-Learning HMM EM Git 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 Git 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, HTML/CSS, SQL, OCaml, Swift, Prolog, JavaScript, jQuery

### Frameworks & Platforms

JavaSpark, Flask, Bootstrap

### Tools

Git, LATEX, Linux, Bash, 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