

QIANG ZHANG

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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.

Project Highlights 🐙 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