QIANG ZHANG

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Education

Johns Hopkins University **Baltimore, MD**
Master of Science in Engineering (M.S.E.) in Computer Science *GPA: 3.75/4.00* Sept. 2016 - May 2018

Southeast University **Nanjing, China**
B.E. in Measuring Control Technology & Instruments *GPA: 3.1/4.0* Aug. 2007 - Jun. 2011

Experience

Nanjing Institute of Measurement And Testing Technology 2012 - 2014
Calibrating Engineer *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 Anual Best 10 Employee (out of 200+) of year 2013, an unprecedented achievement for a second year.

Lab of Dr. Xu Li of Southeast University 2012 - 2013
Part-time Research Assistant *Nanjing, China*

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

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*

- 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 Team: Guoye Zhang, **Qiang Zhang**
diff Algorithm HTML MinHash Maven Git ZIMPL Java *2017, Baltimore, MD*

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

HMM EM Tagger Myself
NLP Tagger Supervised-Learning Semi-Supervised-Learning HMM EM Git Java *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 Myself
Cryptography Security HMAC SHA Git AES-CBC Go *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, 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 (in progress)		