

Fengguo Tian

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EDUCATIONS

M.S., Computer Science and Engineering	GPA: 3.5/4.0.	University at Buffalo, SUNY,	2015.5-2016.9
M.S., Electrical Engineering	GPA: 3.7/4.0.	University at Buffalo, SUNY,	2013.8-2015.5
B.Eng. in Electrical Engineering	GPA: 3.2/4.0. (80/100).	Northwest A&F University,	2009.9-2013.7

WORK EXPERIENCE

- Software Developer** (Intern), Alpha Studio LLC, Jan, 2017- Present
 - Built the website and implemented the 'Recommendation', 'Chat', 'web statistics' and 'manage' functions.
 - Using Hadoop to setup the Distributed Data Center and process high throughput query.
 - Participate in database design, RESTful service and recommendation system implementation.
 - Built a KNN model using Java and MySQL by combining Web Statistics and Text Mining to find popular products with 500 MB JSON file and **Significantly** increased the hit rate of recommendations.
- Teaching Assistant, University at Buffalo, SUNY. Aug 2014- May, 2015

PROJECTS:

- Implemented a Dynamo-style distributed data storage system in an Android App (Java); 2016
 - Implemented the Node Partitioning, Quorum Replication and Failure handling by using consistent hashing to route the P2P network to guarantee the CAP (Consistency, Availability, Partition tolerance).
 - Built the multithreaded network to synchronize distributed server by using TCP/UDP, Java Socket & Lock.
 - Implemented concurrent operations to guarantee Total-FIFO order, Atomicity, Consistency, Isolation, Durability.
- Implement a Simple Distributed Hash Table Android App (TCP/UDP, P2P, Java socket, SQLite) 2016
 - Implemented the functionalities based on Chord: 1) ID space partitioning/re-partitioning and data storage Replication, 2) Ring-based routing based on consistent hashing, 3) Implemented the Nodes join and route and concurrent insert, delete and query operations by using java socket and multithreaded and TCP/UDP.
 - Test the system by running 5 instances of the app on Android Studio, all content provider instances form a Chord ring and serve insert/query requests concurrently in a distributed fashion.
- Built a HealthCare Data Mining and Recommendation System (Java, AWS, MySQL) 2016
 - A data pipeline using Twitte4J and Nutch to crawl 2000 websites and 500 MB tweets,
 - A KNN predictive model built from the professional data model to classify the 1Million tweets.
 - A recommendation system as data center to rank and feed the personalized advises and news based on user's profiles and feedbacks. After the training stage, the **accuracy** was improved to 65%.
- Built a Social Media Data Mining Search Engine (Java, AWS, MySQL, Solr, PHP, JS) 2015
 - Implemented the Multilingual Retrieval, Content Tagging, Faceted Search, Cross-document analytics and Semantic search by applying the IR theory on the clawed 100 MB tweets.
 - Applied the Alchemy API, gossipy data model and Apache Solr to study a topic trend and verify the data

model with dynamic graphics, the performance was excellent.

5. Implemented Neural Networks Handwritten Digits Classification (Python, Machine Learning). 2016
 - Implemented a Multilayer Perceptron Neural Network and Logistic Regression to classify hand-written digit images by coding the NN theory and comparing with the result of the **SKLearn**, the accuracy is 99%.
6. E-mail Forensics with DKIM & Web Security & Symmetric Key Crypto Implementation. Fall, 2015
 - Using WebGoat to simulate web hacking and implementation Symmetric Key Crypto.
 - Wrote C code using Fork – Exec system to apply the core DKIM algorithm.
7. The full duplex Adaptive Modulation and Coding, Software Defined Networks Lab, Buffalo. 2014,1-2015,4
 - Designed and implemented the full duplex 3*3 MIMO communication test bed, synchronized by GPS signal and soldered two kinds of GPS signal amplifiers.
 - Coding custom function blocks to implement Adaptive Modulation & Coding based on different level of SNR using C++ and Python.

TECHNICAL SKILLS

Programming languages: Java (MVC Spring, JDBC, Multi-thread), C/C++, Python (Numpy, Scipy, Pandas, Scikit-learn, Matplotlib.), SQL Server, MySQL, HTML, PHP, JavaScript, CSS, XML.

IDEs and Tools: Hadoop, AWS, MVC Spring, RESTful, LAMP, Apache Solr, Eclipse, Sublime, Ipython notebook, Visual Studio, Git, Matlab, GNU Radio, HighChart.

Machine Learning Algorithms:

- Supervised Machine Learning: (Multi-layer) Neural Network (NN), Naive Bayes, KNN, Logistic Regression, SVM.
- Unsupervised Machine Learning: K-means, Clustering.
- Text Mining: Latent Dirichlet Allocation (LDA) models, TF-IDF analysis.

SUMMARY

- Background in Distributed System, Data Mining, Information retrieval, Machine Learning and Networking
- 3+ years experience in object-oriented Design/programming, Testing and Debugging on cross-platforms;

COURSE LISTS

Algorithms Analysis & Design, Distributed Systems, Machine Learning, Information Retrieval, Advanced Information Retrieval, Computer Security, Software Engineering, Knowledge Bases & Ontologies, Principal Information Theory & Coding, Principal Modern Digital Communication.