Tian Zhang

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EDUCATION

Northwestern University - Evanston, IL **December 2015 (Anticipated)**

Master of Science in Computer Science GPA: 3.714/4.000

Beijing University of Posts and Telecommunications - Beijing, China **June 2014**

Bachelor of Engineering in Electronic Science & Technology GPA: 83.23%

PROFESSIONAL SKILLS

- Programming Languages: Java, C/C++, HTML, JavaScript, SQL and Python.
- Language: Native speaker of Mandarin.

PROJECTS

Networking Protocols Implementation **January 2015 - March 2015**

Course: Introduction to Computer Networking *Northwestern University - Evanston, IL*

- Accomplished two IP algorithms (Link State and Distance Vector) in C++, designed the data structure of routing table stored in each node, and wrote code on Dijkstra's and Bellman-Ford algorithms to find the shortest route.
- Implemented TCP based on RFC793, achieved both passive and active opens, made actions to socket requests and incoming packets, handled the timeout event with Go-Back-N mechanism, and improved transfer reliability with flow control.
- Built a HTTP client and two HTTP servers. The advanced server could handle multiple sockets simultaneously.

3D Space Construction **February 2015**

Course: Introduction to Computer Graphics *Northwestern University - Evanston, IL*

- Generated multi-colored jointed 3D objects with WebGL in JavaScript, made them move smoothly and continuously in an infinite 3D space, and demonstrated the scene with a HTML webpage.
- Various user interactions were available, including changing the angle of view with mouse-drag, moving the objects with the keyboard, and stop/run or speed up/down the animation with buttons.

Data Structures Implementation **November 2014**

Course: Data Structures & Data Management *Northwestern University - Evanston, IL*

- Established a binary search tree in Python, and performed operations including insertion, BFS & DFS, getting rank and setting successor while maintained all the attributes of each node.
- Constructed a graph with adjacency matrix and adjacency lists representation, and accomplished inserting, checking and removing nodes or edges.

Tic Tac Toe Game **June 2013**

Course: Smart Card System *Beijing University of Posts and Telecommunications - Beijing, China*

- Wrote a Tic Tac Toe game in Java on a smart card, which could read APDU commands from the card reader.
- The program worked in two modes - with or without verification of the chessboard MAC code sent by the card reader - and it guaranteed every step as the best choice.

Path Finding Smart Car **September 2012**

Course: Practicum in Electronic Techniques *Beijing University of Posts and Telecommunications - Beijing, China*

- Developed a path-finding program in C on 51 SCM to lead a smart car autonomously going through a labyrinth that was unknown in advance, and won second prize (top 10%) in the school's competition.
- Stored the car's selection at each fork of the road in a tree, which helped the car to try different directions and go back to the parent fork of a dead end correctly.

HONORS & AWARDS

Excellent Graduate of Beijing, China June 2014

Honorable Mention (Second Prize) in Mathematical Contest In Modeling February 2013

Top Prize (1/146) in Business Plan Competition of Beijing University of Posts and Telecommunications September 2012