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# **Programming backgrounds summary**

My experiences are mainly on software engineering: building full stack apps/websites on different platforms. Currently I am learning in Intelligent System's track and learning those algorithms that deal with massive data.

# **Programming Skills Stack**

Languages:

Proficient: Java, Ruby, Javascript, HTML5/CSS3

Prior Experience: C++ and Python for algorithms/cli, C#, Emacs Lisp, Scheme

Techs/Systems/Frameworks:

Familiar with: Meteor.js, Ruby on Rails, Node.js

Can use: Ionic 2/Angular 2, React.js, iOS cocoa, Bash, Git, Linux, Apache, Nginx

#### Education

Computer Science B.S. Brandeis University

GPA 3.5 Fall 2014 - Present

## **Courses Experience**

Math: Linear Algebra, Multi-variable calculus, Statistics, Discrete Math

**Computer Science**: Intro to Java and c, OOP with Java, Structures and Interpretation of Computer Programs, **Spoken Dialog Design**, **Web Development & Incubator**, Data Structures, Theory of Computation, **Software Engineering**, **Operating System**, **Artificial Intelligence** 

#### **Experiences**

Voice Control Chess Summer 2015

6300 lines of code (Me)

Rule based NLP and Dialog System to move chess by voice

PvP match with meteor's built-in socket based data service (push data)

Html5/CSS3&Flexbox/JS/Meteor.js/MongoDB/Regex

#### **Duewiz - Homework Reminder**

Spring 2016

4200 lines of code (Me)

Web scraping School's education website to make due dates for homework manageable

Ruby on Rails 5: Action Cable (web socket), Active Job (asynchronous processing), redis cache

Web scraping with mechanize (CSS selector and XML XPath)

### **Personal Blog Website**

Spring 2015 – Present

https://www.jczhang.com

At first with ghost on node.js then move to wordpress (on linode)

Wordpress, LEMP, DNS, SSL, server maintenance, linux, vps

Atom-code2html Spring 2016

100 lines of code

More than 300 downloads

An atom editor package that copies the selected region's code and convert html literals and wrap <code> blocks to make it html ready

Coffeescript, Atom package

Cars Simulation at toll Spring 2017

500 lines of code

A simple python MVC architecture to visualize/animate a cellular automaton model to simulate car streams traffic at toll

Python 3, MVC, matplotlib animation

#### **Computer Science Research & Study**

2013

1300 lines of code (Me)

Conversion from codes (C++) to flowcharts (A code editor like interface)

Visual C# .NET 4.0 2013

Conversion from flowcharts to codes (flowchart visualization and built-in VBScript interpreter)

Visual Basic 6.0 2013

Wrote a thesis on two-way conversion of code and its flowcharts

Won first place (Co-op with another student) in High School Affiliated to Renmin University of China

## Software Audio Repeater Wrapper for Windows Media Player

2009

When playing audio files, allows to repeat between a start timestamp and an end timestamp

Visual Basic 6.0/Windows Media Player ActiveX

#### **Chat program in LAN (both Server and Client)**

2009

One client and one server, communicating using Winsock over TCP/IP protocol

Visual Basic 6.0/Winsock

#### Static information site for ancient Chinese articles

2010

Show both original article and its translation within one page but in different frames (we don't have the equivalent concept in html5 now). Click a link on the article, shows corresponding translation on the bottom frame (using anchors(Dreamweaver) to navigate)

Html/Dreamweaver

#### Random name picker from class list (with animation)

2012

The UI's thread is shuffling names: the background timer thread update (invoke UI thread) a new name on main UI. When clicked, a random name is picked.

Visual C# .Net 4.0 WPF Multi-threading

# iOS HTTP login demo

2014

Login user over HTTP protocol to get an activities list from hackathon

Objective-C, iOS 5, AFNetworking

# **Awards**

Second Class in National Olympiad in Informatics in Provinces

C++, Algorithms Competition 2013

Youths Developers Seminar Hackathon first place

iOS, Objective-C, AFNetworking 2014

## Note:

Projects before college are not hosted online (some not under VCS, some on Google Code SVN which has moved), and most of other projects are hosted on Github. Those under VCS I know about how many lines of code I programmed.

Last edit: 2/9/2017