Ian Johnson

19 Sedgwick Dr., CHV, CO, 80113 • www.ianjjohnson.com • (303)-815-3710 • ianj@smu.edu

EDUCATION: Southern Methodist University President's Scholar — Dallas, Texas
Bobby B. Lyle School of Engineering — Expected Graduation: May 2019
Major: Computer Science — GPA: 4.00
Colorado State ACT Perfect 36 Award / AP Scholar with Distinction

TECHNICAL EXPERTISE:

Programming languages:	C++, Java, Python, some experience with: Swift, Objective-C, HTML/CSS, MatLab, R
Operating Systems:	Linux, OS X, Windows 8.1
Application Environments:	GCC, GNU Make, Eclipse, XCode, IDLE, QTCreator
Software Applications:	Bash, Git, LaTeX, Vim, Valgrind, Microsoft Office

RELEVANT COURSES: Data Structures, Assembly Language and Machine Organization, Discrete Computational Structures, Database Concepts, Programming Languages, Computer Networks and Distributed Systems, Statistical Methods for Engineers

EXPERIENCE / MAJOR PROJECTS:

Southwest Airlines Maintenance Logs Data Mining / Research — 12/2015 - Present
- Working at the Intelligent Data Analysis lab at SMU to build a machine learning / data mining system to automatically encode airplane maintenance logs into ATA codes for future predictive analysis research and improved airplane health monitoring/logging

Class Scheduling Resource Allocation Software — 03/2014 - 08/2015
- Designed and implemented a proprietary depth-first-search based machine learning algorithm for student, teacher, and class scheduling for a high school of 3,600 students
- Implemented a modular GUI and end-user app for school administrators to use to schedule classes based on student, teacher, and facilities constraints
- Marketed software to Cherry Creek School District in Greenwood Village, Colorado and used software to generate a schedule for the 2015/2016 school year which showed a ten-fold improvement in teacher and student conflict counts

Senior Mentor for SMU Data Structures Course — 01/2016 – Present
- Assist a TA in the lab sections for CSE2341 at SMU by guiding students with their lab assignments and grading students' lab submissions

Physics Word Problem Solver and Linux SMS I/O Project — 10/2014 – 8/2015
- Designed and implemented a natural linguistics-based physics word problem solver which can receive problems over SMS, analyze them for provided parameters and queries, and send answers via SMS
- Created an SSh-over-SMS system at HackRice 2016 which allows users to run a virtualized bash shell over text message and send/receive shell commands and replies using a two-factor authenticated system

WikiBooks Search Engine in C++ — 9/2015 – 12/2015
- Implemented XML parser to load ~1GB WikiBooks XML dump into inverted file index in 90 seconds using custom hash table and AVL tree data structures
- Designed and built query processer which ranks search results by TF/IDF relevancy

Autonomous Arduino-Based Robot — 8/2015 – 12/2015
- Led multidisciplinary team which designed and built autonomous robot to traverse a 20'x20' playing field and use custom-built sensors to monitor wind speed and conductivity/water content in a soil sample
- Won first place in a final competition of 16 teams

Automatic Anti-Texting-and-Driving System — 04/2015 - 08/2015
- Built a comprehensive Arduino / Android system which automatically detects phone usage by driver and triggers the car alarm on a Ford F-150 using a Bluetooth signal between Android and Arduino and an injected digital signal on the F-150 entertainment circuit board

References available upon request — github.com/ianjjohnson