

Joshua Fan

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Education

University of Washington, Seattle, WA (*junior*)

2013-2017 (expected)

- **B.S. Computer Science** (*expected June 2017*)
- **3.99 GPA** (cumulative)
- **Relevant coursework:** Data Structures and Algorithms, Systems Programming, Hardware/Software Interface, Discrete Mathematics, Probability and Statistics, Matrix Algebra
 - *Currently taking:* Software Design & Implementation

Experience

Software Design Engineer Intern at BitTitan

June-September 2015

- Implemented an in-memory data migration provider in C#, and used it to efficiently test a crucial object (that executes mailbox migrations) without relying on network connections and different data formats
- Improved the performance of a key method by around 60% by optimizing SQL queries and consolidating redundant calculations

Teaching Assistant at University of Washington Computer Science & Engineering

September 2015-present

- Assisted teaching a Probability/Foundations of Computing course
- Effectively communicated challenging concepts to students in classroom, office hours, and grading

Research Assistant at UW Computing for Development Lab

March 2015-present

- Helped redesign the "mPneumonia" app, which helps public health workers in India and Ghana easily collect data and survey patients according to pre-defined medical protocol
- Collaborated with team and PATH (global health company) to correct survey logic and optimize user experience

Projects

Search engine and web server (C, C++)

(Course project)

- Developed a file search engine, as well as a web server to process user queries using the search engine
- Implemented low-level hash-tables, inverted indices, and index files to speed up processing

Where are the people? (Java)

(Course project)

- Computes the population of a user-defined region of the United States, given a large census data set
- Optimized algorithms by incorporating parallelism, concurrency, and data preprocessing

Checkers game applet (Java) — <https://github.com/joshuaafan/Checkers-Applet>

(Extracurricular)

- Used object-oriented design to program a game of checkers (against a simple AI) as a Java applet
- Applied self-taught graphics programming (Swing) and event handling skills to implement a drag-and-drop GUI

Grep implementation (Java)

(Optional course project)

- Built a program that efficiently searches a text file for lines matching a given regular expression
- Implemented recursive functions and a context-free grammar to convert any regular expression into a corresponding non-deterministic finite automaton (finite state machine) object, facilitating efficient searches

Personal website and quiz app (HTML/CSS, Javascript) — <http://joshuaafan.github.io>

(Extracurricular)

- Built personal website showcasing interests, projects, and résumé, using self-taught web development skills
- Created a web app allowing users to quiz themselves on different topics in Javascript/JQuery (*in progress*)

Languages and Technologies

- **Significant experience:** Java (2 years), C# (*industry experience*)
- **Some familiarity** (*used in projects*): C, C++, HTML/CSS, Javascript, JQuery, SQL
- **Tools/environments** (*basic familiarity*): Eclipse, Git, Visual Studio, Linux