Joyce Zhu

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Software Development Qualifications

- **Programming Languages and Tools:** Proficiency in Python, C, Java, bash scripting, and git; experience with SQL, SQLAlchemy ORM for Python, HTML/CSS/JavaScript, OCaml, Scheme, and Prolog.
- Knowledge and capacity to learn evidenced by success in both software development internships and academic research.

Education

UNIVERSITY OF ROCHESTER   ROCHESTER, NY
Bachelor of Science in Computer Science; Bachelor of Arts in Music   **Expected May 2017**

- **GPA of 3.97** (out of 4.0) and Dean's List 6/6 semesters.
- Recipient of Wilder Trustee and National Merit Scholarships and 2014 Iota Book Award.
- Fall 2015: Head teaching assistant for Computation and Formal Systems (CSC 173).
- 2014-2015 academic year: Volunteer peer tutor for the Computer Science Undergraduate Council.

Computer Science Courses and Projects

UNIVERSITY OF ROCHESTER   ROCHESTER, NY
Database Systems, Computer Security Foundations   **Spring 2016**
Computational Models and Limitations, Operating Systems, Web Programming   *Selected Past Courses*

- **C:** concurrent web proxy server capable of handling plain text, binary data, and chunked transfer encoding.
- **Java:** concordance (hash table) of the frequency of words and their locations in Shakespeare's sonnets.
- **Prolog:** grammar parser and first order logic translator for a basic subset of English.
- **Python, JavaScript, HTML, CSS:** CRUD web application for children to learn basic programming principles.

Software Development and Programming Experience

edX   CAMBRIDGE, MA
Software Engineering Intern   **Summer 2016**

- Working with third parties to develop features for open edX, edX's open source software initiative.

PIXABILITY, INC.   BOSTON, MA
Python Software Engineering Intern   **May 2015–April 2016**

- Designed and implemented JSON-based query language for users to create query filters of arbitrary complexity when sending HTTP requests to exposed endpoints to retrieve a subset of records from a MySQL database.
- Extended exposed endpoints' sorting capabilities to allow users to sort on any computed metric; previously, users could only sort on a restricted subset of metrics corresponding with existing database column names.

UNIVERSITY OF ROCHESTER   ROCHESTER, NY
Undergraduate Research Assistant, Lab of Prof. Philip Guo   **January-December 2015**

- September-December 2015: Performed an empirical study of the quality of instructional programming videos on YouTube and trends in the instructors' strategies for presenting programming concepts to their audiences.
- January-May 2015: Wrote Python scripts to interface with a SQLite database and extract data about trends in discussions on the forums for a popular MOOC introductory computer science course offered by MIT on the edX platform.

HARVARD UNIVERSITY, SCHOOL OF ENGINEERING AND APPLIED SCIENCES   CAMBRIDGE, MA
Programming Intern   **Summer 2014**

- Wrote bash scripts to automatize job generation and submission to a high-performance computing cluster and shell scripting crash course for scientists moderately familiar with Linux to help future researchers modify my scripts; user guide and some of my scripts available for download at *http://bertoldi.seas.harvard.edu/downloads*.

CASA SYSTEMS, INC.   ANDOVER, MA
Software Development Intern   **Summer 2012**

- Expanded capabilities of an existing video streaming program written in C to stream up to 1000 simultaneous sessions for both IP unicast and multicast applications.

Publications

- **Joyce Zhu**, Jeremy Warner, Mitchell Gordon, Jeffery White, Renan Zanelatto, Philip J. Guo. **Toward a Domain-Specific Visual Discussion Forum for Learning Computer Programming: An Empirical Study of a Popular MOOC Forum.** *IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC)*, Oct 2015.