

# Brijesh Rakholia

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## Work Experience

### Viacom • Software Engineering Intern • New York

Summer 2016

- Worked closely with the Video Player Team to develop live-streaming support for MTV Apple TV app using tvOS and TVML. Launched the feature for the VMA's.
- Developed an internal tool using d3.js to visualize Git repositories in order to analyze software development practices.

### PhoneLab • Systems Researcher • Buffalo, NY ([phone-lab.org](http://phone-lab.org))

Feb 2015 - Present

- Working towards quantifying and prioritizing smartphone Quality of Experience (QoE).
- Developing an offline-processing pipeline to analyze on-screen user interactions and events such as touch events, progress bars, screen freezing, etc.
- It combines low-level Android Logging (platform instrumentation) and analysis to measure the length of time user waits for apps to complete certain actions.

### University at Buffalo • Computer Science TA • Buffalo, NY

Fall 2016

- **CSE 250 Data Structures in C++**
  - Hold office hours to help students one-on-one with course material and programming assignments.
  - Help students understand complex concepts and data structures such as recursion, binary trees, HashMap, etc.
- **CSE 199 How Internet Works**
  - Develop activities for students to help them better understand how internet as a service works.
  - Interact with students one-on-one during the class while they are working on activities.
  - Help develop tools and infrastructure used to maintain *internet-class.org*.

## Software Projects

([more at github.com/brijeshrakholia](https://github.com/brijeshrakholia))

### BridgeOS - An Instructional Operating System | C ([ops-class.org](http://ops-class.org))

Developed BridgeOS by implementing larger OS subsystems (three subsystems mentioned below) from scratch onto previously developed instructional OS/161 kernel at Harvard.

- **Synchronization Primitives**  
Implemented synchronization primitives such as mutex locks, conditional variables, and reader/writer locks.
- **File System Calls and Process Support**  
Designed and implemented the file system syscall interface (read, write, close, lseek, dup2, chdir), and process support (exec, fork, waitpid) so that user-programs can be executed by launching a simple shell.
- **Virtual Memory (top 1% of the class)**  
Carefully designed and successfully implemented virtual memory, including address translation, TLB management, page replacement, and swapping – without any memory leaks.

### Silver | JavaScript, Python

Wrote a slack bot and a web crawler to book private rooms every midnight at University at Buffalo Libraries.

### HiSpy | Java, Flask, MongoDB

Developed an Android app with a flask backend to let people play "I Spy" based on geolocation.

### Muvis ([muvis.herokuapp.com](http://muvis.herokuapp.com)) | JavaScript, HTML, CSS

Muvis is a music visualizer using d3.js developed at Spotify Music Hackathon

### Robotic Arm ([tiny.cc/roboticarm](http://tiny.cc/roboticarm)) | JavaScript

Designed a robotic arm to follow the movements of my hands in 3D space using leap motion and arduino.

## Education

### University at Buffalo

B.S Computer Science  
Class of May 2017

### Relevant Courses

Operating Systems, Database Concepts, Robotic Algorithms, Software Engineering, Algorithms, Computer Organization, Linear Algebra.

## Skills

**Preferred Tools and Languages** – C++, C, Java, HTML, CSS, Vim, Node.js, Express, Git, Markdown, and AsciiDoc

**Familiar Tools and Languages** – JavaScript, Python, ES6, Ionic, Three.js, Paper.js, D3.js, MongoDB, Angular, Heroku, Atom, Jira, and Confluence.