

# Sanchit Batra

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## EDUCATION

**University at Buffalo, State University of New York** | (Anticipated) May 2020

Bachelor of Science, Computer Science | Minor, Music Performance

GPA: 4.0/4.0

## WORK EXPERIENCE

### Department of Computer Science, University at Buffalo

Assistant Developer, CSE331 (Algorithms) | Dec 2018 - Present

Python, C++, Java, Satisfy, NetworkX, PyTest

- Developed the template and grading code for an NP-Complete reduction problem
- Provided comprehensive (97%) test coverage and generated testcases for the assignment

Teaching Assistant, CSE250 (Data Structures) | Aug 2018 - Present

C++

- Conducted recitations and office hours, managed the course Piazza page and provided debugging support

Teaching Assistant, CSE199 (How The Internet Works) | Aug 2017 - Dec 2017

JavaScript, SQL

- Supported recitations, mentored students and provided debugging support

### Department of Mechanical Engineering, University at Buffalo

Research Assistant, Motion Simulation Laboratory | Apr 2018 - Present

Unity, C#, Python, Google Elevation API

- Constructed a virtual model of a section of UB's North Campus for research on autonomous vehicles, and led the creation of a simulated driving environment for training drivers
- Produced heightmaps by encoding elevation data into 16 bit greyscale PNG files using the G

### Math Place, University at Buffalo

Mathematics Tutor | Sep 2017 - Present

## PROJECTS

### Babel AR

Python, scikit-learn

- ASL to text translator for the Vuzix Blade (AR smart glasses)
- Won the award for the Best Use of 5G Currencies in Immersive Media sponsored by Verizon at BrickHacks

### Math Place Scheduler

Flask, SQLAlchemy

- Engineering a web application to replace our current means of exchanging shifts in the Math Place

### UBHacking (Official) Website

Bootstrap, HTML5, CSS, Python, Flask

- Aided in the design of the FAQ management page as well as the authentication pages
- Added the ability to add and update FAQs through an admin panel

### UB Lost and Found

Bootstrap, HTML5, CSS, PHP, SQL

- Designed a website and developed the back-end to facilitate easy broadcasting of lost items for University at Buffalo students with a 72.5% success rate till date

### Roseate Engineering Services Website

Bootstrap, HTML5, CSS, PHP

- Constructed a website for a business start-up leading to a 23% increase in monthly revenue

### Interpreter

Python, SML

- Developed an interpreter for a simple functional language that supported variables, functions, local and global scoping, basic arithmetic, relational operators and string operations with elementary error handling

### Fractal Visualizer

Java

- Contrived a multi-threaded program for visualizing fractals with color change and zoom functionality

### Chat Application

C

- Created a chat application using TCP sockets to gain a deeper understanding of networking concepts

### HTML Validator

C++

- Devised a program to detect invalid HTML files using stacks and an embarrassing amount of hard-coding

### Music Retriever

Python

- Engineering an application which aims to allow the creation of custom practice routines using music with a certain pre-specified tempo instead of the (dreary) metronome through Spotipy, an open source library

### UBLogin

Python, Selenium

- Wrote a script to bypass the time-consuming login process for accessing UB's course management website

## ACTIVITIES

- Placed 3<sup>rd</sup> on the UB ACM leaderboard for Advent of Code 2018
- Recipient of the 2018 Grace W. Capen Award
- Top student contributor for the CSE116, CSE250, CSE341, CSE305, CSE365 and CSE331 Piazza pages
- Ranked in the top 4 bands at Buffalo Untapped, stood 1<sup>st</sup> in Cord 'n' Blend and 2<sup>nd</sup> in Wired'14
- Placed in the top 250 scholars out of 42000 globally at the WSC Tournament of Champions hosted by Yale University