

# Sahil Bansal

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## EDUCATION

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**Brown University, Sc.M. Computer Science**

Expected Graduation May 2024

- Relevant Courses: Computer Graphics, Computer Networks, Databases

**Brown University, Sc.B. Computer Science, 4.0/4.0 GPA**

Class of 2023

- Relevant Courses: Functional and Object-Oriented Programming, Algorithms and Data Structures, Computer Systems, Operating Systems, Distributed Systems, Software Engineering, Deep Learning, Computer Vision, Designing Humanity Centered Technology, Software Security Exploitation, Real-Time and Embedded Software, 2D Game Engines, Intro to Robotics, Programming Languages, Compilers, Data Science, Applied Cryptography

## WORK EXPERIENCE

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**Amazon, Software Development Engineer Intern**

June 2022 – August 2022

- Wrote design documentation and software for the data privacy team of the Buy With Prime organization to validate DSAR responses from domain teams. Deployed using AWS and tested through the Mockito framework. Demoed project to supporting teams and management.

**Brown University, Teaching Assistant**

January 2021 – Present

- For 5 courses, (Intro to CS, Intro to Computer Systems, Real-Time and Embedded Software, Operating Systems, and AI)
- Enhanced course documentation, provided conceptual and debugging help for students, and graded homework and projects.

**Infotopia, Co-Tech Lead**

June 2021 – August 2021

- Worked as part of a team to develop a machine learning model that detects misinformation in the public health sector
- Coded a browser extension that used the model to detect misinformation in online news articles

## PROJECTS

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**Weenix | C**

January 2022 - May 2022

- Programmed the majority of an operating system kernel known as Weenix. Implemented threads, processes, synchronization primitives, device drivers for terminals, disks, and memory devices, a virtual file system, S5FS, and VM (address space and memory management, running user-level code, servicing system calls, virtual memory maps, handling page faults)

**Ultimate Tic Tac Toe | Java, React, CSS, Heroku**

May 2021

- Worked in a team of 4 to design and implement a website to play Ultimate Tic Tac Toe (<https://uttapp.herokuapp.com/>)
- Utilized websockets to allow clients to communicate in real time using the server as an intermediary

**GANime | Python, Tensorflow, Google Cloud Platform**

May 2021

- Developed and compared three different General Adversarial Networks (Deep Convolutional, Least Squares, Wasserstein) to generate the best anime faces

**Maps | Java, SQL, ReactJS, CSS**

September 2021 - April 2021

- Collaborated with two colleagues to implement a primitive version of Google Maps whose system was designed to allow for easy maintenance and flexibility of algorithms
- Used SQL to query a database, and cached that information in a KDTree, which was then traversed using the A\* algorithm. Input coordinates and resulting path were displayed on a static webpage.

**Database | C**

November 2020

- Applied multithreaded and network programming to create a thread-safe server that allows multiple clients to connect and simultaneously edit a database

**Shell | C**

October 2020

- Write a version of Shell that has capabilities for built-in commands like cd, ln, rm, and exit, running programs by forking off child processes, and redirecting files
- Added job control, to allow the movement of jobs between the foreground and background, and appropriately handled signals

## SKILLS

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**Programming Languages:** Java, Python, C, C++, Golang, Scala, Racket, OCaml, ReasonML, SQL, HTML (Beginner), CSS (Beginner), JavaScript, (Beginner), ReactJS (Beginner), Assembly x86-64

**Tools:** Git, GDB, Google Cloud Platform, Tensorflow, AWS

**Additional Experiences:** Network Programming, Multithread Programming, Constraint Language Programming, Arduinos, Pair Programming, Peer Review, Unit Testing, Basic Spanish, Conversational Hindi

## PUBLICATIONS

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- "Designing the Metaverse: A study of design research and creative practice from speculative fictions to functioning prototypes", Proceedings of the Future Technologies Conference (FTC) 2022, Volume 2