

# BRIAN LAI

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## EDUCATION

**San Francisco State University – San Francisco, CA**

**August 2016 – May 2020**

Bachelor of Science in Computer Science

- **Coursework:** Data Structures, Discrete Mathematics, Machine Structures, Web Software Development, Programming Methodology, Operating Systems, Analysis of Algorithms, Programming Languages, Software Engineering, HCI, Multiplayer Game Development, UNIX Embedded Systems, Linear Algebra
- **GPA:** 3.53

## SKILLS

<b>Coding Languages</b>	C#, Java, C++, Python, HTML, CSS, JavaScript, SQL, Swift, Ruby, Assembly
<b>Technologies</b>	Maven, Gradle, Angular, NodeJS, ReactJS, ASP.NET Core, Selenium
<b>Tools</b>	Linux, JetBrains, Visual Studio, Unity, Godot, Xcode, AWS, GCP, Azure, Docker
<b>Spoken Languages</b>	English, Vietnamese, Japanese

## EXPERIENCE

**Teaching Assistant – Department of Computer Science, San Francisco**

**August 2019 – May 2020**

- **TA for CSC 256:** Machine Structures, graded bi-weekly MIPS assignments and exams for 60+ students. Provided assignment assistance by answering questions and clarifying instructions.

## SELECTED PROJECTS

**Infection FPS Game**

**May 2020**

- Worked in a *team of 8* to create a *multiplayer first-person shooter* game in *Unity C#*.
- Implemented multiplayer lobby and gameplay functionality using *Mirror High-Level Networking API*.

**Self-Driving Car Robot**

**May 2020**

- Worked in a *team of 4* to build an *autonomous self-driving robot car* with *Raspberry Pi*.
- Built multithreaded functionality to power and drive the robot in *C* using various sensors and interfaces.

**Mecha Fighter VR Game**

**December 2019**

- Worked in a *team of 5* to create a *multiplayer virtual reality fighting game* in *Unity C#* using the *SteamVR SDK*.
- Built controller *motion gesture detection system* to trigger game events and send over the network.
- Implemented networking using custom server written in *Java*.

**BaySpace Image Posting Web App**

**August 2019**

- Worked in a *team of 8* as the *GitHub manager* to build a *full-stack web CRUD application*.
- Built the server with *RESTful API* using *NodeJS*, *ExpressJS*, *Amazon Web Services*, and *MySQL database backend*.
- Built account registration system with *password encryption* and authentication for *uploading images*.
- Built admin page with basic *CRUD capabilities* to modify database entries submitted by users.

**Games – Bomberman and Tanks**

**May 2019**

- Designed two structured interactive games using *Java 11 Swing GUI toolkit* for two or more players.
- Developed fast *collision detection system* that runs every frame using the *Visitor design pattern*.
- Developed unique algorithms to calculate 4-direction bomb explosions based on nearby collisions and frame-based sprite animations.