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RYAN S. NIU

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EDUCATION

Computer Engineering B.S.	**University of California, Santa Barbara**	*Expected* June 2023

- **Dean's Honors** since Fall 2019
- **College of Engineering Honors Program** since Fall 2020
- **Relevant Coursework**: Problem Solving with Computers I & II (C++), Object Oriented Design (C++), Automata and Formal Languages, Linear Algebra, Differential Equations, Discrete Mathematics, Probability and Statistics, Physics
- **GPA:** 3.8

VOLUNTEER AND EXPERIENCE

Hackathon Organizer	**SB Hacks VII**	**March 2020 – Present**

- Participated in weekly meetings to plan out the 350+ person event.
- Corresponded with many tech companies and startups to gain sponsorships and fund the hackathon.
- Assisted with the logistics of moving the hackathon to virtual.

Officer	**UCSB Game Development Club**	**March 2020 – Present**

- Connected the club with the games industry by reaching out and hosting online Q&A sessions with experienced developers.
- Organized and participated in the club's yearly 20+ person game jam.
- Currently preparing the ongoing club schedule for the Fall quarter.

Student Tutor	**Monta Vista High School**	**Aug 2018 – Jun 2019**

- Assisted the AP Computer Science A teacher by grading papers and answering student questions about their code.
- Tutored a class of 30+ high school students in a Java/Linux-based computer environment lab in preparation for the AP test.
- Helped students debug their code while maintaining a "hands-off the keyboard" approach.

PROGRAMMING PROJECTS

BlueSpot	**TreeHacks 2020**	**Feb 2020**

An AR message board visualizer app designed for posting location-specific messages.

- Worked on the AR portion of the app using Unity's built-in AR foundation package.
- Utilized the MapBox API to get the geolocation data of the user and store the data using the FireBase API.
- Designed and tested the UI elements and the 3D models of the app.
- Programmed the app using C# in 36 hours in a team of 3.

VoiceOrder	**SB Hacks VI**	**Jan 2020**

An affordable automated intercom system using the Amazon Alexa and Google Cloud Machine Learning APIs.

- Generated the CSV file for the machine learning model using C++ and converted a boba shop menu into data using Python.
- Helped construct the Google Cloud natural language processing entity extraction model.
- Debugged the voice input aspect of the Alexa Skill through the Alexa Developer Console.
- **Awarded Best Alexa Skill** at the hackathon after working in a team of 4 for 36 hours.

Touhou DX	**CodeDay Bay Area @ Horizons, SF**	**Feb 2018**

A top-down bullet-hell game where players must defeat enemies with attacks inspired by calculus concepts.

- Utilized the *ScheduledExecutor* class in Java to write an update function without a framework.
- Used lambdas and abstract classes to make the bullet patterns and projectile move paths a function with respect to time.
- Led a team of 4 people for 24 hours, delegating tasks to teammates and combining their work to produce the final product.
- **Awarded Best Game** out of 20+ groups at the hackathon.

Portfolio: https://devpost.com/ryansniu

HONORS & AWARDS

Platinum Division	**USA Computing Olympiad (USACO)**	**Nov 2013 – Mar 2017**

- Achieved the highest rank, Platinum, alongside 120 competitors out of 500+ in the 2017 US Open contest.
- Studied and utilized valuable computer science concepts such as grid-search algorithms (e.g. breadth-first and depth-first search), graph theory (e.g. Dijkstra, Bellman-Ford, Floyd-Warshall, Prim's Algorithm, Kruskal's Algorithm), and dynamic programming (e.g. Knapsack).

SKILLS

Programming Languages: Java, C#, C/C++, Python, HTML
Software: Google Cloud, Firebase, Visual Studio, Unity, GitHub, Docker, Microsoft Office (including Excel), Linux, MuseScore
Spoken Languages: English, Mandarin (proficient), Japanese (conversational)