RYAN S. NIU

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EDUCATION

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

- **Dean's Honors** since Fall 2019 — **GPA:** 3.85/4.00
- **College of Engineering Honors** since Fall 2020
- **Relevant Coursework**: Problem Solving with Computers, Object Oriented Design, Foundations of Computer Science, Automata and Formal Languages, Analog and Digital Circuits, Fundamentals of Logic Design, Data Structures and Algorithms

SKILLS

Languages: C/C++, Java, C#, Python, HTML, CSS, JavaScript
Technologies: React.js, Android, Linux, Vim, Git, Unity, Visual Studio, Microsoft Office, Google Cloud, Firebase, Alexa Skills Kit

EXPERIENCE

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

- Organizing the 7th iteration of UCSB's annual hackathon, a 350+ person event that bring students from various universities and disciplines together to collaborate on projects.
- Corresponding with tech companies and startups to maintain relationships with sponsors and gain potential new sponsors.
- Planning to host a workshop designed introduce programming to beginners prior to the hackathon.

Outreach 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 annual 20+ person game jam, which helped introduce new members to the club.
- Hosted workshops to teach club members about the game development process such as game programming and production.

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

- Assisted AP Computer Science A teachers by answering student questions about programming and object-oriented design.
- Tutored a class of 30+ high school students in a Linux-based computer environment lab in preparation for the AP test.
- Debugged students' complex Java programs while maintaining a "hands-off the keyboard" approach.

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 data structures and algorithms such as grid-search (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).

PROJECTS

VoiceOrder *(Awarded Best Alexa Skill)*	**SB Hacks VI**	**Jan 2020**

- Built an automated intercom system designed to replace costly drive-thru services, saving businesses thousands of dollars.
- Streamlined the ordering process by leveraging the Alexa Skills Kit and AWS Lambda to run a serverless feedback loop.
- Trained a natural language processing machine learning model to extract user intent using the Google Cloud AutoML NLP API.
- Developed a frontend React.js application to display orders from a Firebase database in real-time.

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

- Constructed an AR message board visualizer app designed for posting and sharing location-specific messages with others.
- Worked with Unity's built-in AR foundation package to build an Android app with augmented reality capabilities.
- Utilized the MapBox API and Firebase API to obtain and store user message contents and geolocation data.
- Designed the app's UI interface and modeled interactive 3D objects to enhance user experience, allowing users to place their messages as "blue spots" onto surfaces through the app which can be expanded and read by other users.

Primes and Dragons	**Ongoing Project**	**Aug 2019 – Present**

- Developing a unique mathematical puzzle RPG for PC and Android using Unity and C#.
- Implemented a custom serialization system that can save and restore player and enemy states at any point in the game.

Touhou DX *(Awarded Best Game)*	**CodeDay Bay Area @ Horizons, SF**	**Feb 2018**

- Created a calculus-themed top-down shooter game where players must defeat enemies on a Cartesian plane.
- Coded the game from scratch in only Java with gameplay loops, graphics, audio, and 2D-collision detecting in 24 hours.
- Invented a way to draw and resize equation lines onto the screen in real-time to act as an obstacle after porting the game over to Unity. This tool can correctly graph rectangular, parametric, polar, and discontinuous functions like a graphing calculator.