

# Darren Ng

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## Objective

To experience working in a research lab while expanding on my professional and personal skills

## Education

University of California, Merced

B.S. in Computer Science and Engineering (Expected 2022)

## Personal Projects

### Nixie Tube Clock

(March 2020 – Present)

- Worked alone to create a fully functioning, feature heavy clock with good energy efficiency, memory storage, customizability, and safety
- Researched and designed a custom circuit board
- Written full code for a working display, UI, and settings menu
- Written animation sequences for 'slot machine' and cross fading effect
- Tested different human interface devices and UI to allow full extent of clock customizability
- Always testing and improving engineering options to provide maximum day-to-day convenience

### Harmony VR - Hack Merced V

(March 2020)

UC Merced, California

- Worked in a team of 4 to create an immersive game that can teach young audiences and up how to identify the difference between positive vs negative words directed at them
- Worked in Unity and C# to create manager scripts
- Implemented dynamic scenery through code and UI
- Held table and pitched project idea model against other teams

### Chammotion

(Jun 2020 – Present)

- Working with ever growing team size to create a fast-paced puzzle game using color manipulation as main mechanic
- Worked in Unity and C# to create most all scripts the game requires such as managers, local saving/loading, menus, etc

- Held early alpha testing with volunteers to locate bugs and study tester gameplay

### **Ball N' Shayne - GMTK Game Jam 2021 Submission**

(July 2021)

- Worked in a team of 4 with the theme 'joined together' to create a physics heavy game with a unique player movement mechanic
- Worked in Unity and C# to create manager, object animation, physics, sceneload, object, UI scripts, etc
- Researched different options for realistic iron ball and chain physics
- Formulated equations to run unique calculus operations and created function library for other coders to use

### **Half Past Dead - Brackeys Jam 2020.2 Submission**

(August 2020)

- Worked in a team of 4 with the theme 'rewind' to create a puzzle game focused on the idea that rewinding back a few steps is the mechanic for progressing the game
- Worked in Unity and C# to create manager, object animation, physics, sceneload, object and UI scripts, etc
- Formulated equations to run unique calculus operations and created function library for other coders to use

### **King's Gambit - Miziziz Jam**

(August 2020)

- Worked in a team of 2 to create a game with a specific sprite pack for all visual elements
- Worked in Unity and C# to create multiple manager scripts for all the AI, interaction elements, and game projectiles
- Worked with AI library to create different types of AI depending on the game object

### **Oversteer - GMTK Game Jam 2020**

(July 2020)

- Worked in a team of 4 with the theme 'out of control' to create a fast-paced game where the player dodges obstacles as they come but by moving the environment rather than the player
- Worked in Unity and C# to create manager scripts and other 3D object movement scripts

### **Motorized Closet Door**

(Jun 2018)

- Worked alone to upgrade a closet door to automate opening and closing with voice commands using an Arduino
- Worked on code for door open/close states
- Worked on receiving multiple inputs and handling each input depending on door state
- Established one-way communication between three devices to implement voice commands

- Ensured safety as top priority, implementing multiple safety features that were clear and visible for anyone to observe

### **Newton's Second Law of Cooling Demo**

(March 2018)

- A High School Capstone project in which I demonstrate how we can get the time at which an object will cool to a specific temperature, given the difference in surrounding temperature
- Worked on coding required scripts to communicate with sensory hardware
- Studied variables that could cause inconsistencies in calculations
- Held a table for demonstrations and explanations

## **Experience**

### **Hardware & Software Team Member (Campus Drone Project)**

(Aug 2018 - May 2019)

The Foster Family Center for Engineering Service Learning

- A project geared towards improving the current delivery of tours of campus at UC Merced using aerial systems
- Took principal photography for CDP Demo Reel and presented it during team's Fall Final Design Review

### **High School Capstone Project**

(Oct 2017 – March 2018)

Crescendo Bioscience

- Worked alongside/shadowed computer scientist
- Brainstormed ideas, issues, and solutions for a project app that manages organization
- Programmed a multitude of user interfaces for project app
- Surveyed potential users of project app for needs and possible issues
- Project app was successful with surveyed needs being fulfilled

### **Student Assistant II**

(Oct 2019 – Jan 2022)

University of California Transportation and Parking Services

- Maintained student parking and reserved lots
- Carried out routine check-ups on various campus locations
- Operated golf carts during pick-up services for disabled students as well as for VIP services during special events

### **Inventory Specialist**

(Jun 2018 - Aug 2018)

Golden Gate Wine Cellars

- Documenting stocks of certain products
- Accommodate for sending and receiving products
- Ensured safe shipping of the sealed products against temperature fluctuations and impacts. Other tasks included keeping the warehouse floor clean.

**Swim Instructor**

(Jan 2018 – Aug 2018)

City of South San Francisco Aquatics

- Taught children of all ages up to 12 throughout multiple levels
- Responsible for creating a safe and friendly swimming environment for students
- Required to speak in a more universally comprehensive manner to accommodate younger students which included demonstrations
- Occasionally, conducted evaluations of students and created written assessments of their skills

## Volunteering

**Youth Counselor**

(Jun 2013 – Aug 2016)

The Learning Place

- I was responsible for creating a safe, friendly, and fun learning environment for students 2<sup>nd</sup> to 8<sup>th</sup> grade
- General tasks included group lessons throughout the day and interactive worksheet sessions
- Must ensure an atmosphere where students respected each other so that learning can be without peer tension
- Prepared occasional projects based on subjects taught during lessons

**Phone Banker**

(Jun 2016 – Aug 2016)

David Lee 2016 Campaign

- Responsible for spreading word of the vision of the campaign
- Required that I call possible voters for the campaign to explain the purpose of the campaign and how that would affect the resident's daily life
- Responsible for canvassing and delivering door hangers in support of the campaign

**Meal Packer**

(Jul 2017 – Aug 2017)

SF-Marine Food Bank

- Responsible for sorting fresh produce and assembling bulk food packages towards ending hunger in San Francisco and Marin

## Extracurriculars

### AP Computer Science Teaching Assistant

(July 2017 – May 2018)

South San Francisco, California

- Answered student questions
- Graded quizzes and tests

### Robotics Club

(July 2017 – May 2018)

South San Francisco, California

- Was Secretary and managed fundings as well as club purchases
- Worked on both hardware and software of robot
- Coded autonomous phase of robot for FIRST robots competition
- Was competition driver against opposing schools

### Swim Team

(July 2017 – May 2018)

South San Francisco, California

- Was in Varsity
- Competed in meets

### Chess Club

(July 2017 – May 2018)

South San Francisco, California

- Competed in games against other schools

## Awards and Acknowledgements

California Department of Education & California Mathematics Council recognition of mathematics achievement (2018)

Engineering Service Learning Innovate to Grow Top Finisher (Dec 2018 & May 2019)

HackMerced V Winner 2nd Place in Social Good (2019)

South San Francisco High School CCS-CPF Scholar Athlete (May 2018)

Music Teachers' Association of California Certificate of Merit Piano Level 7 (2017)

