# Benjamin Lucero

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## Objective

To grow my software engineering skills, and to be a part of a community that shares my passion for research and technology.

## Education

Current GPA: 3.7 Graduation Date: Spring 2022

**Pitzer College** **2018 - Current**
On track for the Physics major at Pitzer College through the Keck Science Institute.

**Majoring at Harvey Mudd College** **2018 - Current**
On track for the off-campus Computer Science major at Harvey Mudd.

**Relevant Coursework:**
*Computer Science 5*: Introductory sequence to CS. Experience with Python.
*Physics 108*: Thorough understanding of Matlab and its applications.
*Game Programming in C++*: C++ language, memory allocation and pointers, design methods.
*Computer Science for Insight*: Practical applications of Python.
*Computer Science 60*: Functional programming and algorithms in Java.

## Work Experience

**Axel Lab at Columbia University** **Summer 2019**
As a software engineer intern, I implemented DeepLabCut to track various body parts of fruit flies. Then, I developed several neural networks to recognize distinct actions (e.g., grooming, drinking, walking), using tracking data as input.

**Grutor at Harvey Mudd** **Current**
Grader and tutor for students taking the intro computer science course.

## Research Experience

**Southern Oregon University** **2017-2018**
Member of Southern Oregon University's evolutionary and cognitive psychology lab.

- Presented research relating to the perception of Facebook profiles at the Psychonomics Psychology Conference in Vancouver, Canada.
- Presented research on cognitive maps of virtual mazes at the Western Psychological Association in Portland, Oregon.

## Projects

**Crazy Cacti:** Contributed to the development of 2D arcade game (similar to Space Invaders). The entirety of the game was built from the ground up using C++, SDL2, and UML.

**Flappy Bird:** Trained a neural network to play a version of Flappy Bird using pixel data as input to the model.

**5C Hackathon (1st Place Novice Category):** Designed an augmented reality IOS application using ARKit and Swift.

**SLO Hacks:** Built a voice-controlled robot using a Raspberry Pi, Arduino, and Google's speech API.

**Arduino RFID Card Reader:** Created a simple security system where an Arduino could read RFID cards and information stored on them.

**Portfolio Website (in progress):** I have the majority of the Front-End developed. Working on finalizing and hosting soon.

## Skills

**Programming:** I have experience with Python, Matlab, Java, C++, Bash, Assembly, and Racket. I quickly pick up languages and I am excited to learn more.

**Public Speaking**: Three years of Congress and Policy debate experience.

**Mathematics:** Three years of experience on the Varsity Mathematics Team.

**Logic Pro X:** Six years of experience working with Logic Pro X. Capable of creating and editing sound files.

## Clubs and Activities

**5C Software Club:** Collaborating with students in building software and projects.
**Claremont Surf:** Leading trips as well as teaching new members to surf.