

# Seif Ibrahim

FRESHMAN COMPUTING STUDENT · UNIVERSITY OF SANTA BARBARA · CA

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*"A motivated computer scientist and ViM nerd with 5+ years of experience who is obsessed with high-performance code/algorithms and enjoys building personal projects and hacks in C/C++. I am looking to utilize and develop my skills at a Computer Science internship."*

## Education and Training

### University of Santa Barbara California

*Santa Barbara, California*

COMPUTER SCIENCE BS, COLLEGE OF CREATIVE STUDIES (CCS)

2018-2022

- **Relevant Coursework:** Algorithms and Data Structures in C++, Unix Operating Systems Lab, Mathematics of Computer Science (Discrete Math & Probability), Linear Algebra, Calculus III Multivariable Calculus.
- **Standardized Tests - SAT: 1530/1600, SAT Math II: 800/800, AP Computer Science A: 5**
- **1 of 6 freshmen** chosen to pursue research and an accelerated Computer Science courseload in College of Creative Studies.

### Python Boot Camp at UC Berkeley

*Berkeley, California*

PYTHON DATA SCIENCE AND WEB DEVELOPMENT CERTIFICATE

2016

- Python Boot Camp: A rigorous course in the Python Scripting Language covering website backends(Django), data processing libraries (NumPy, pandas, SciPy, etc.), and Git version control.

### PROMYS Research Scholarship (Program in Mathematics for Young Scientists)

*Boston University*

CERTIFICATE OF COMPLETION (CLAY MATHEMATICS INSTITUTE)

2017

- One of 80 students, national and international selected in 2017 to do research in number theory at Boston University (six-week summer program sponsored by the Clay Institute) under the mentorship of professors and graduate students from universities such as MIT, Harvard, Princeton.

## Skills

### Programming Languages

C/C++, JAVA, Python, Django, Flask, HTML/CSS, Javascript, LaTeX, SQL

### Software

Solved hundreds of algorithm and security problems on PicoCTF, Project Euler, USACO, Codeforces, Google Foobar, etc.

Git, ViM, Linux Development, Eclipse, Matlab, Adobe Photoshop and Illustrator, Excel

## Projects

### Linux Fake Webcam

Wrote a hacky program in C allowing users to impersonate anybody on webcam chat. The program inputs any video file and a corresponding JSON file of timestamps. The GUI allows users to smoothly and convincingly control the actions of a virtual person or thing on their webcam. I achieved this by writing a Linux Kernel Module (using V4L2 API) and corresponding a application (using Libav) to pipe video into a webcam device.

### Masterlock Combo Solver

Built a robot which is able to unlock any master combination lock in seconds and output its combination by designing a custom breadboard circuit, writing Arduino code, 3D printing a frame, and assembling together with motors.

### Neural Network Game Bot

Developed an AI player in Javascript using neural networks and evolutionary learning algorithms. The bot teaches itself how to complete any level of a platformer game (similar to mario) given only the game controls and end destination.

### Django Database & Website

Created a large database web application in Django used by Albany High School to organize annual freshmen debates.

### LISP interpreter in SNAP

Designed an interpreter for LISP on top of SNAP (a visual programming language) in a clever attempt to loophole the requirement of using a visual language for in-class projects, and instead using a written language.

## Honors & Awards

2016-18 **USA Computing Olympiad (USACO)**, Platinum Division in Algorithms and Data Competition (top 5% nationally)

*California, US*

**1st Place Award PiE Robotics Competition at UC Berkeley**, First Place Award and Software/Sensors Award out

2017-18 of 30+ schools. As president of Robotics Club, I trained a team in different areas of STEM, and lead them to victory in competition. I gained skills in wiring and programming Arduinos, Beaglebones, and reading hardware specs.

*California, US*

2017-18 **Moody Mega Math Modeling Challenge**, Data Modeling Paper Award and \$1000 Scholarship (top 8% nationally)

*California, US*

2016-17 **Bay Area Mathletes**, Undeclared Math Team in competition with all Bay Area high schools

*California, US*

2016-17 **The National French Contest (Le Grand Concours)**, Gold Medal (top 5% nationally)

*California, US*