



Alan Luo
developer and student

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Statement

I'm a part-time developer, part-time student, and full-time maker with a passion for learning and creating awesome projects.

I specialize in interdisciplinary work that bridges creativity and code. I see technology as a tool to drive forward global education and research.

Experience

Research Intern Visual Analytics Lab at Tufts June - August 2017
Currently researching perceptual studies and human-data interaction. Created Javascript library for running Amazon Mechanical Turk experiments.

Research Intern QxBranh June - July 2016
Worked on white paper benchmarking adiabatic quantum annealing as a heuristic for discrete cardinality-constrained portfolio optimization.

Software Intern Fifth Wisdom Games July 2014
Developed educational game to teach phonetics to children primarily using Cocos2D and Javascript / HTML5 Canvas. The game is called "Glue Monster," and can be found on the company website.

Education

Stanford U. Math Camp (SUMaC) 2016
Highly competitive summer program. Studied abstract algebra.

Stanford OHSx 2016 - 2018
University-level math courses

- Real Analysis: A
- Differential Equations: A

Choate Rosemary Hall High school, 2014 - 2018

AP-Level Courses (or beyond)

- AP BC Calculus: A+
- Linear Algebra, Honors: A+
- Multivariable Calculus, Honors: A+
- Game Theory, Honors: A
- Graph Theory, Directed Study: A
- Modern Math, Honors: A
- Virtual Reality, Directed Study: A
- Procedural Generation, DS: A
- Computer Music, DS: A
- Science Research Program: A

Test Scores

- AP BC Calculus: 5
- AP Physics C: 5
- AP Chemistry: 5
- AP Computer Sci.: 5
- SAT Math II: 800
- SAT Chemistry: 800
- SAT Physics: 800
- PSAT: 1510/1520

Awards

- Award for Excellence in Advanced Study of Computer Science: 2017, winner
- Cum Laude Society for 5th formers (ten students in year): 2017
- Award for Excellence in Advanced Study of Mathematics: 2016/17, HM
- Prize for General Excellence in the Fourth Form (Character, Scholarship, Influence and Honorable Conduct): 2016, honorable mention
- Prize for Excellence in Trigonometry and Precalculus: 2015, winner
- Dean's List for CRH Students Who Excel in All Subjects: all terms

Science Research Program

- Competitive signature two-year program. Requires writing review paper and creating a poster about a 10 week summer research internship. Culminates in a presentation to the school in the fall.

Extracurriculars

- Prefect of Hill House
- Lead Online Editor of The Choate News (official school publication)
 - Designed and created website: thechoatenews.choate.edu
 - Maintain and administrate site, manage advertisements
- Co-President of the Choate Programming Union (CPU)
 - I teach people to code three times a week. Examples at cpu.party
- President of Games and Change
 - Run tournaments and gaming events to raise money for causes
- Peer tutor for math and physics
 - Meet once weekly with younger students for tutoring math and physics
- Physics club, Math team, STEM club, Robotics team

Selected Projects

(see website for more)

alanluo.com (link)

Regularly updated and curated gallery of projects. Also a Pico theme.

Computer Music (link)

Built a soft synthesizer in Pure Data and composed interactive music with it. Also created a wearable glove interface using Arduino.

Swarm Robotics (link)

Designed, milled, soldered, and programmed small communicating robots.

The Choate News (link)

Proposed and spearheaded initiative to overhaul outdated website. Built website using Wordpress, maintained and administrated it including SEO. Website now regularly sees a thousand visitors a day.

Procedural Generation (link)

Created 2D planet generator which creates artistic renditions of alien planets. Created 3D planet generator which creates interactive environments.

Skills

(see website
for more)

Programming

Have programmed for more than 8 years in many languages. President of my school's programming club.

- Proficient with Javascript (ES6), HTML/CSS, Java, Python, Unity. Also LaTeX.
- Most major front-end libraries, including jQuery, Node, React
- Significant experience with Arduino, graphics, full-stack (LAMP, Flask, Node), data analysis (numpy, Mathematica)
- Many others, including PD, SVG, C/C++, C#, Linux/Bash

Software

I have used a wide array of software in my various positions.

- Proficient use of Photoshop
- Consistent use of Illustrator, InDesign, Eagle, Ableton Live

Leadership

I was an advanced division debater until I quit this year, but won as high as second place during my time, and was a semifinalist for our all-school speech competition. Also, teaching students through peer tutoring and CPU has made me very comfortable with public speaking. This has helped me with running my almost-daily club meetings and organizing tournaments and hackathons. I was selected to apply these skills as a prefect next year.