

# Gabriel Alzate

170 E. 6<sup>th</sup> St Box #1418 Claremont, CA 91711-7004  
747.275.6113 • [gabrielphilip.alzate@pomona.edu](mailto:gabrielphilip.alzate@pomona.edu) • [gpalzate.github.io/portfolio](https://gpalzate.github.io/portfolio)

## EDUCATION

---

### Pomona College, Claremont, CA

B.A. in Computer Science, minor in Mathematics; GPA: 3.92 Expected May 2021

Relevant coursework: Data Structures and Advanced Programming (Java), Computer Systems (C, x86\_64 Assembly), Object-Oriented Game Development (C++) , Linear Algebra

### University of California, San Diego, La Jolla, CA

B.S. in Computer Science (Jacobs School of Engineering) Sept 2017 - June 2018

Relevant coursework: Intro to CS (Java), Data Structures and Algorithms (C, C++), Mathematics for Algorithms and Systems Analysis, Discrete Mathematics, Calculus I/II, Intro to Data Science (Python)

## SKILLS

---

**Programming Languages:** Proficient in Java, C, C++; Familiar with Bash, Python, HTML, CSS, Javascript

**Software Tools:** Comfortable with UNIX command line, Git, Valgrind, GDB, JDB, vim

**Spoken Languages:** Fluent in English and Tagalog

## PROJECTS

---

### Game Trees Weak-AI

October 2018

- Implemented a  $k$ -ary tree to create a computer that plays simple, deterministic games such as tic-tac-toe
- Added weak-AI capabilities such that the computer prunes losing tree branches in  $O(1)$  time

### Seam Carving

August 2018

- Implemented a content-aware resizing algorithm to change image size without destroying proportions
- Enhanced time complexity from  $O(mn^2)$  to  $O(mn + n)$  by implementing dynamic programming

## EXPERIENCE

---

### Computer Science Teaching Assistant, Pomona College, Claremont, CA

Feb 2019 - Present

- Collaborates with a team of experienced students to tutor 35 students in small groups for the Data Structures and Advanced Algorithms class
- Conducts mentoring sessions to guide students through weekly assignments and address conceptual questions discussed in lecture
- Meticulously grades 6-8 assignments per week, paying close attention to code correctness, design, and reliability

### Software Development Intern, Middle Tree (MT), Claremont, CA

Feb 2019 - Present

- Develops scripts to manage the CRM of over 150 students of Middle Tree, a nonprofit education center that provides affordable tutoring and college counseling for K-12 students
- Designs the sign-in/-out page for students and visitors that updates MT's user database 50 times daily

### Computer Science & Engineering Society (CSES) Outreach Chair, La Jolla, CA

Sept 2017 - June 2018

- Tutored introductory computer science topics at a local high school in classes of up to 15 students
- Led a software tools and development environment workshop (Git, dotfiles, UNIX terminal, debugger) for college students in introductory CS courses in groups of 20-30 students
- Gained 17 new members for CSES as a result of the development environment workshop

## CO-CURRICULAR ACTIVITIES

---

**Board Member, Violinist,** Symphonic Student Association, UC San Diego

Sept 2017 - June 2018

**Vice President,** UNESCO HEART, International School of Manila

Sept 2015 - June 2017