Gabriel Alzate

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EDUCATION

Pomona College, Claremont, CA

B.A. in Computer Science, minor in Mathematics   Expected May 2021

  Relevant coursework: Fundamentals of Computer Science (SML), Data Structures and Advanced
  Programming (Java)

University of California, San Diego, La Jolla, CA

B.S. in Computer Science (Jacobs School of Engineering); GPA: 3.6   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, Bash; Familiar with C++, Python, HTML, CSS, Javascript

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

Spoken Languages: Fluent in English and Tagalog

PROJECTS

"PATH" Travel Efficiency Calculator (Hackathon)   Nov 2018 - Present

  • Creates a website that suggests the best travel options based on transportation, price, time, and distance

  • Incorporates Google Direction Services and Uber API with UIKit framework to create a responsive website

  • Develops the optimization logic & web-crawler in the back-end and the map & radio form in the front-end

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

Markov Chain Monopoly   Sept 2018 - Present

  • Adapts the Markov chain to simulated Monopoly games to calculate long-run probability values

  • Analyzes Markov matrix and probability values to guide better investment choices

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

Pomona College HPC Hahn Grant Program, Claremont, CA   Sept 2018 - Present

  • Coordinates video tutorials on software tools such as version control, the CLI, and IDEs

  • Created a tutorial series demonstrating the uses of Git and GitHub for large-scale projects for developers
    and non-developers alike

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