

# ALEXANDER JANG

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## EDUCATION

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### University of California, Berkeley

Berkeley, CA

Computer Science, B.A, 2020-2023,

College of Letters and Science

Business Administration, B.S, 2022-2024,

Haas School of Business

Level: Junior, Grade: Sophomore, GPA: 3.7

**Courses Taken:** CS70 (Discrete Math and Probability), CS61A (Structure and Interpretation of Computer Programs, Math54 (Linear Algebra and Differential Equations), Econ 100B (Economic Analysis--Macro)

**Currently Taking:** CS61B (Data Structures), UGBA10 (Principles of Business), Econ 171 (Development Economics), PHIL12A (Introduction to Logic)

## EXPERIENCE AND LEADERSHIP

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### Fermilab QuarkNet Summer Research Program

Batavia, IL

Summer Intern

June 2019 - August 2019

- Conducted a machine learning project to create a robot vision software (Acceptance rate less than 3%)
- Program used to assist particle accelerators at the Fermi National Laboratory supervised by Dr. Katsuya Yonehara
- Presented our work at the annual QuarkNet workshop to physics instructors from across the country.
  - Worked full-time 37.5 hours/week for 6 weeks.

### KSEA (Korean-American Scientists and Engineers Association) Mentoring Program

Chicago, IL

Initiator and Mentee

June 2018 - May 2020

- Proposed to launch a free program that gives high school students the opportunity to work with industry professionals
  - Average of 12 PhD level mentors and 20 high school student mentees every year
- Actively worked towards improving the program by creating schedules for events, leading mentee meetings, etc
- Worked on a robotics project with Dr. Young Soo, Park (Argonne National Lab) Using V-REP and ROS.
  - Year 2: Condensed matter physics project with Dr. Zuhawn Sung to test superconducting properties of Nb<sub>3</sub>Sn

## PERSONAL PROJECTS

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### Ant Colony Optimization Algorithm Implementation (Python)

July 2021

- Created a basic Ant Colony Optimization program using PyGame implementing equations found on the Wikipedia page
  - Keeping pet ants, I was also very interested in ant behaviors and their food scavenging methods
- With further research, I came across the Ant Colony Optimization Algorithm which computer scientists use to solve NP-hard problems (in this case the Travelling Salesman Problem), which served as my initial motivation for this project

### Triangularize (Java)

August 2021

- Created a program that recreates a given image with only triangles. The program adds triangles one at a time to a blank canvas
- Uses Singular Value Decomposition with JAMA Matrices to compare the SVD value of the original image with the SVD value of a randomly generated triangle and adds the triangle if it is "similar" enough (using cost function)

## EXTRACURRICULARS

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### Phi Beta Lambda (Business Organization - Tech Analyst)

September 2021 - Present

- Chapter of Future Business Leaders of America that helps consult for many major companies (Twitter, Lyft, Reebok, etc)

### Cal Table Tennis (Fundraising and Outreach Officer)

Spring 2020 - Present

- Tabled and flyered to spread club awareness and sent out emails to 250+ students who signed our interest form

## SKILLS

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**Computer Programming:** Python, Java, R, Scheme, LabVIEW, ROS, V-REP

**Languages:** English, Korean, Spanish