GABRIEL CHEN

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EDUCATION

University of California Berkeley, Berkeley, CA
Bachelor of Art in Computer Science **Aug 2020**
GPA 3.456 / 4.0

Berkeley City College, Berkeley, CA
Associate of Science in Mathematics with highest honor **May 2018**
Academic Honor Student
GPA 4.0 / 4.0

RESEARCH INTERESTS

Computational Complexity, Algorithms Design, Hardness of Computation, and broad interests in Theory.

HIGHLIGHTED COURSES

Computer Science
Efficient Algorithms and Intractable Problems, Data Structures & Algorithms, Structure and Interpretation of Computer Programs, Discrete Mathematics and Probability Theory, Combinatoric and Discrete Probability, Introduction to Database System, Great Ideas of Computer Architecture (Machine Structures), Introduction to Artificial Intelligence.

Mathematics
Linear Algebra, Introduction to Mathematics Research Through Knot Theory, Basic Statistics.

Logic
Intermediate Logic.

EXPERIENCE

California Institute of Technology, CA
Undergraduate Researcher – Catalytic Turing Machines, CS Theory **Feb. 2020 — May. 2020**
Advisor: Chris Umans
• Theory • Computational Complexity •
- Researched the Computational Complexity of Catalytic Turing Machines

University of California Berkeley, Berkeley, CA
Reading Group Organizer – Undergraduate Theoretical Computing at Berkeley **Jan. 2020 — Mar. 2020**
• Theory • Computability and Complexity•
- Organized the reading group of studying Computability and Complexity by Neil D. Jones
- Provide weekly exercise and report ideas

University of California Berkeley, Berkeley, CA
Undergraduate Researcher – Community Detection Algorithms, CS Theory **May. 2019 — Aug. 2019**
Advisor: Prasad Raghavendra
• Theory • Approximation Algorithms •
- Researched Max Cut problem and Semidefinite Programing (SDP)
- Researched nearly linear running time algorithms to solve Community Detection Problem

University of California Berkeley, Berkeley, CA

Course Reader – CS 70 Discrete Mathematics and Probability Theory **May. 2019 — Jul. 2019**

• CS Theory • Discrete Math • Probability •

- Meet with course staff and discuss the best way to help students learn this hard subject
- Grade course homework and exams
- Teaching during office hours, homework party, and guerrilla sessions

University of California Berkeley, Berkeley, CA

DRP Mentee – Directed Reading Program, Mathematics Department **Jan. 2019 — May. 2019**

Mentor: Arun Ganesh

• Approximation Algorithms • Graph Theory • Network Design •

- Read papers and notes on Spectral Graph Theory, MST Approximation Algorithms, Cheeger's Inequality, Network Design, Max Flow, MaxCut Problem and SDP.
- Gave an end-semester presentation on Luca Trevisan's paper, "Max Cut and the Smallest Eigenvalue".

University of California Berkeley, Berkeley, CA

Undergraduate Researcher – JAMX Project, Berkeley Institute of Data Science **Jan. 2018 — May. 2018**

• Python • MongoDB • React • JavaScript • HTML/CSS •

- Led the platform research group with another researcher.
- Researched different designing methods for platform and database including MongoDB, PostgreSQL, AWS, Twitter API, Google API, and React to get better performance.

University of California Berkeley, Berkeley, CA

Software Engineer Intern – Xinampa Analytics at CITRIS Foundry **Jun. 2018 — Aug. 2018**

- Python • Algorithm • Theory • APIs •
- Built a gateway between SMS and Gmail to achieve better user communication experience without Twilio.
- Optimized the algorithms for mining and analyzing data to get better and more accurate output efficiently.
- Made Real Data more accessible by building an index for the data mined by a crawler.

Berkeley City College, Berkeley, CA

Teaching Assistant – to Dr. Shawn McDougal in "Linear Algebra" **Jan. 2018 — May. 2018**

- Helped improving students' understanding of the subject during and after class by arranging study groups and one-to-one tutoring.

Berkeley City College, Berkeley, CA

Tutor – Calculus I, Calculus II, Applied Calculus for Economics, Intro to CS **Sep. 2016 — Dec. 2016**

- Instruct students individually and in groups, using various teaching methods such as lectures, discussions, and demonstrations.

RELATED PROJECTS

Narcissus, Data Mining and Analysis Project

Author **Jun. 2018 — Present**

A project currently running on a Raspberry Pi aims to mine data from Twitter and analysis it for Environmental Justice.

JAMX, Computer Science & Data Science Research Project

Researching Collaborator **Jan. 2018 — Present**

An undergraduate research project associate with Berkeley Institute of Data Science at UC Berkeley built with Python, React, MongoDB, and Python.

Ada, Raspberry Pi Project

Author **May. 2017 – Present**

Information provider and daily reminder robot written by Python.

Nice Blog, Jekyll Project
Author **Mar. 2016 – May. 2017**
Website framework written with Ruby, JavaScript, HTML and CSS.

AWARDS & MEMBERSHIP

Undergraduate Theoretical Computing at Berkeley	**Jan. 2019 - Present**
Association of Women in EECS	**Aug. 2018 - Present**
Chinese Rainbow Network	**Jan. 2019 - Present**
Phi Theta Kappa Honor Society	**Jan. 2018 - Present**
Information & Communication Technology Scholarship, Peralta Colleges Foundation	**2017 – 2018**
Academic Honor Student, Berkeley City College	**Jan. 2017 – May 2018**
Dean's List, Pasadena City College	**Feb. 2020 – Present**

SKILLS & LANGUAGES

C/C++, Java, Python, SQL, HTML, CSS, JavaScript, React, MongoDB, Linux/Unix, Git, LaTeX.
Fluent in both Mandarin and English. Beginner for Spanish and Japanese.

REFERENCES

Prasad Raghavendra (CS), Arun Ganesh (CS), Dan Daniel Erdmann-Pham (Math).