

Benjamin Chu

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EDUCATION

UCLA

PH.D BIOMATHEMATICS

Expected 2021

Advisor: Kenneth Lange

UC BERKELEY

B.A. APPLIED MATHEMATICS

2012 - 2016

COURSEWORK

APPLIED COURSES

Convex Optimization
MM Optimization
Sparse linear algebra
Statistical computing
Linear statistical models
Deterministic models
Stochastic models
Biomedical data analysis
Continuum mechanics
Data structures

PURE MATH COURSES

Linear algebra
Abstract algebra
Algebraic geometry
Real analysis
Complex analysis
Numerical analysis
Probability
Combinatorics
Partial differential equations

BIOLOGY COURSES

Human genetics
Population genetics
Molecular, cell, and develop. bio
Biochemistry & molecular bio
Evolutionary biology
Biology of HIV

SKILLS

PROGRAMMING

Julia • Matlab • R
Python • Java

LANGUAGES

English • Japanese
Mandarin Chinese

RESEARCH

KENNETH LANGE'S LAB | GRADUATE STUDENT RESEARCHER

2017 - Present | Los Angeles, CA

Open source code development in Julia, emphasizing data streamlining and reproducible research.

- Integration of iterative hard-thresholding with Open Mendel umbrella platform
- Deriving non-linear loss function to expand application of IHT
- Better model selection via prior weighting and group selection

JOSEPH DISTEFANO III'S LAB | GRADUATE STUDENT RESEARCHER

2016 - 2017 | Los Angeles, CA

Extending the thyroid system simulator THYROSIM (matlab, available online) to patients of various body weights using allometric scaling and parameter estimation. (Paper under preparation)

CARMAY LIM'S LAB | RESEARCH ASSISTANT

2013 - 2016 | Academia Sinica, Taiwan

Modeled 27 zinc-water complex and 7 major enzyme-inhibitor structures. Computation of Gibbs free energy using Density Functional Theory under various degree of solvent exposure. (paper submitted to J. Phys. Chem.)

EXPERIENCE

GOOGLE | SUMMER OF CODE | 2018

An unique summer program where students work on self-proposed open source projects. My project involves adding 3 additional features to IHT.jl which implements iterative hard-thresholding.

TEACHINGS

MATH 98 / 198 | UNDERGRADUATE STUDENT INSTRUCTOR

2013 - 2016 | Berkeley, CA

Taught 7 semesters of beginner/advanced Rubik's cube course (2 units) at UC Berkeley, with about ~ 15 students per semester. Average instructor rating 4.8/5.0

GRANTS & MISC. AWARDS

present	Genomics Analysis Training Grant	NIH grant
present	Graduate Student Researcher	NIH grant under Ken Lange
~ 2017	American Red Cross	Lifeguarding, First Aid, AED, and CPR
~ 2015	14 Rubik's cube tournaments	Best = 10.52 seconds, 144 th place in U.S.
		910 th in the world
~ 2015	Inter-university Cube Relay	10 th place internationally
2014	First UC Berkeley Go (Weiqi) Tournament	1st place