

# Kenneth Hung

http://kenhung.me

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## EDUCATION

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### University of California, Berkeley

*Ph.D. in Mathematics; Advisor: Prof. William Fithian; GPA: 3.9/4.0*

Berkeley, CA

*Aug. 2014 – Present*

### California Institute of Technology (Caltech)

*B.S. with Honors in Mathematics and Computer Science (minor); GPA: 4.0/4.0*

Pasadena, CA

*Sept. 2010 – May 2014*

## PUBLICATION AND PREPRINTS

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### Statistical methods for replicability assessment

*Kenneth Hung and William Fithian, in preparation*

*Present*

- **Meta-analysis:** Analyzed dataset from experimental psychology replications to quantitatively answer previously vague questions about replicability in the scientific domain
- **Multiple testing and post-selection inference:** Developed new tests and new metrics for replicability analysis
- **Simulations and recommendations:** Simulations and data visualizations in support of better future scientific practices

### Rank verification for exponential families

*Kenneth Hung and William Fithian, Annals of Statistics*

*2019*

- **Multiple comparison with sample best:** Devised a more powerful approach to this classical problem that handles sparse large parameters without sacrificing power in the dense case
- **Simulations:** Demonstrated gains in power using Matlab, Python and R

## TEACHING AND WORK EXPERIENCE

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### Citadel LLC

*Quantitative Researcher Intern*

Chicago, IL

*May 2017 – Aug. 2017*

- **Market making team:** Two projects on high frequency trading stock price predictive models
- **Model selection:** Investigated new high-dimensional feature selection in linear models for best model and best model path
- **Machine learning methods:** Predictive models based on kernel methods and random forests using R

### Facebook Inc.

*Software Engineer Intern*

Menlo Park, CA

*Jun. 2012 – Sept. 2012*

- **Pages team:** Implemented UI elements for page admins and crowd-sourced information using XHP

## RESEARCH EXPERIENCE

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### Summer Undergraduate Research Fellowship

*California of Institute of Technology*

Pasadena, CA

*Jun. 2011 – Sept. 2011*

- **Solid Mechanics Group:** Optimizations of the quasicontinuum method on lattice structure computation; worked under Prof. Malena Inés Español. Displacements of atoms in a lattice structure can be found by minimizing the approximation for the total energy; I analyzed several approximations with the help of Matlab for numerical simulations

### Summer Undergraduate Research Fellowship

*California of Institute of Technology*

Pasadena, CA

*Jun. 2013 – Sept. 2013*

- **Algebraic combinatorics:** Critical groups of Strongly Regular Graphs (SRGs); worked under Prof. Mohamed Omar on properties of the critical groups in relation to the parameters

## PROFESSIONAL ACTIVITIES

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### Causal inference reading group

*University of California, Berkeley*

*Aug. 2016 – Present*

- **Topics:** Philosophy, randomized experiment, observational studies, matching, propensity score, DAGs, instrumental variable, sensitivity analysis, regression discontinuity

### Board of Control

*California of Institute of Technology*

*Jan. 2012 – Present*

- **House Representative:** Served as representative for Avery House on a committee charged with hearing cases of potential Honor System violations among undergraduates

## HONORS AND AWARDS

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### Outstanding Graduate Student Instructor, UC Berkeley

*Awarded for outstanding work in the teaching of undergraduates*

*2018*

### Scott Russell Johnson Undergraduate Prize, Caltech

*Awarded to the best graduating mathematics major*

*2014*

### Herbert J. Ryser Scholarships, Caltech

*Awarded based on merit, preferably in pure mathematics*

*2013*

### The Robert P. Balles Caltech Mathematics Scholars Award, Caltech

*Awarded based on performance in mathematics courses completed in the student's first three years at Caltech*

*2013*

### Fredrick J. Zeigler Memorial Award, Caltech

*Awarded for excellence in scholarship*

*2012*

### International Mathematical Olympiad

*Represented Hong Kong; Bronze and Silver*

*2009, 2010*

### Asian Physics Olympiad

*Represented Hong Kong; Honorable Mention*

*2010*

## SKILLS

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**Programming languages:** C/C++, Mathematica, Matlab, Python, R

**Languages:** Cantonese, English, Mandarin

**Technologies:** git, L<sup>A</sup>T<sub>E</sub>X