Haiyu Huang

University of California, Los Angeles
Department of Mathematics
Los Angeles, CA, 90095
USA

haiyu@math.ucla.edu
math.ucla.edu/~haiyu
858-699-4622
LinkedIn

Education

University of California, Los Angeles
Ph.D. in Mathematics, 2021 - present (expected June 2025)
M.A. in Mathematics, March 2021

University of California, San Diego (Magna Cum Laude)
B.S. in Computer Engineering, June 2019
B.S. in Mathematics, June 2019

Publications and preprints

How Few Davids Improve One Goliath: Federated Learning in Resource-Skew Edge Computing Environments. The Web Conference (WWW), 2024. (Accepted)
with J. Zhang, S. Li, Z. Wang, X. Fu, D. Hong, R.K. Gupta, J. Shang.

A limit law for the maximum of subcritical DG-model on a hierarchical lattice [arXiv]
with M. Biskup. Submitted (2023).

Current Research Interests

- Machine learning: federated learning, statistical learning theory.
- Probability theory: statistical mechanics, extremal processes of log-correlated fields.

Technical Skills

Mathematical Skills: probability theory, statistics, machine learning, stochastic processes, real/complex/Fourier analysis, stochastic calculus, analytic number theory.

Programming Languages: Python, C++, Java, C, LaTeX.

Employment

Teaching Assistant, 2019 - present
Department of Mathematics, UCLA
Subjects taught: machine learning, probability theory, statistics, stochastic processes, linear algebra, real/complex analysis, differential equations, calculus.

Teaching Assistant, 2017 - 2019
Department of Mathematics, UCSD
Subjects taught: real analysis, calculus, mathematical reasoning, abstract algebra.

Tutor, 2016
Department of Computer Science and Engineering, UCSD
Subjects taught: object-oriented programming with Java.

Teaching

UCLA (as teaching assistant)

- Winter 2024, Math 170S (Introduction to Probability and Statistics: Statistics)
- Fall 2023, Math 156 (Machine Learning) and Math 275A (Probability theory I)
- Spring 2023, Math 131BH (Analysis Honors II)
- Winter 2023, Math 131AH (Analysis Honors I)
- Fall 2022, Math 275A (Graduate-level probability theory I)
- Spring 2022, Math 131BH (Analysis Honors II)
- Winter 2022, Math 131AH (Analysis Honors I)
- Fall 2021, Math 131AH (Analysis Honors I)
- Spring 2021, Math 131BH (Analysis Honors II) and Math 171 (Stochastic Processes)
- Winter 2021, Math 115A (Linear Algebra) and Math 132 (Complex Analysis)
- Fall 2020, Math 131AH (Analysis Honors I)
- Summer 2020, Math 170E (Introduction to Probability and Statistics: Probability)
- Spring 2020, Math 135 (Ordinary Differential Equations)
- Winter 2020, Math 32A (Calculus of Several Variables)
- Fall 2019, Math 131A (Analysis I)

UC San Diego (as teaching assistant)

- Winter 2019, Math 140B (Analysis Honors II)
- Fall 2018, Math 140A (Analysis Honors I)
- Spring 2018, Math 103B (Modern Algebra II)
- Winter 2018, Math 109 (Mathematical Reasoning)
- Fall 2017, Math 109 (Mathematical Reasoning)
- Spring 2017, Math 20C (Calculus and Analytic Geometry for Science and Engineering)
- Winter 2017, Math 20B (Calculus for Science and Engineering)

Awards and Honors

2019	Graduate Dean's Scholar Award	UCLA
2019	Department Honors in Mathematics with High Distinction	UCSD
2018	Undergraduate Employee of the Year in the Department of Mathematics	UCSD
2018	Physical Science Dean's Undergraduate Awards for Excellence in Math	UCSD