

Kevin You

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Education

Carnegie Mellon University

Bachelor of Science in Mathematical Sciences

Bachelor of Science in Computer Science

Minor in Physics, Minor in Computer Graphics

Pittsburgh, PA

Aug 2021 - May 2025

GPA: 4.00/4.00

Preprints

- Theresa C. Anderson, David Phillips, Anastasiia Rudenko, Kevin You. Infinite intersections of doubling measures, weights, and function classes. Arxiv 2409.18230.
- Arindam Roy, Kevin You. Non-zero values of a family of approximations of a class of L-functions. Arxiv 2411.08364.

Research

Energy conserving time integration

Sep 2023 - Present

Carnegie Mellon University with Dr. Minchen Li

- Create new time integration scheme with energy control for realtime graphics
- Perform theoretical stability and performance analysis on new time integration methods

Panel methods for computer graphics

May 2024 - Aug 2024

NSF IRES at University of Tokyo with Dr. Bo Zhu, Dr. Takeo Igarashi and Dr. Haoran Xie

- Extend aerodynamics solver to arbitrary meshes for efficient exterior fluid simulation

Next event estimation for walk on spheres

Sep 2023 - May 2024

Carnegie Mellon University with Dr. Ioannis Gkioulekas

- Improve sampling for Walk on Spheres PDE solver with physics-based rendering techniques
- Develop next event estimation and control variates for variance reduction

Intersection of doubling measures

Jan 2024 - May 2024

Carnegie Mellon University with Dr. Theresa Anderson

- Construct exotic measures with dyadic/ n -adic properties for applications to harmonic analysis
- Extended inequality from a finite family to an infinite family of function spaces

Zeros and a -values of approximations for a class of L -functions

May 2023 - Aug 2023

NSF REU at UNC Charlotte with Dr. Arindam Roy

- Generalized a family of approximations of L-functions and studied its zeros and a -values
- Proved new asymptotic density results on zeros and a -values

Multiplication in fractional Sobolev spaces

May 2022 - Aug 2022

Carnegie Mellon University with Dr. Giovanni Leoni

- Developed elementary proof to pointwise multiplication in fractional Sobolev spaces in 1D
- Strengthened known results in one dimension, and derived counter-examples for necessity

Outreach

Carnegie Mellon Informatics and Mathematics Competition Club

Sep 2022 - Present

Math/Programming Problem Writing Committee Head/Executive

- Lead committee to write original problems in math and programming for high-schoolers
- Organize programming competition and create testing environments

Selected Coursework

Mathematics:

- Advanced Topics in PDEs: Interacting Particle Systems
- Advanced Topics in Analysis: Optimal Transport and Applications
- Math Studies (Honors) Analysis I & II
- Math Studies (Honors) Algebra I & II

Physics:

- Quantum Computation and Quantum Information Theory
- Quantum Physics
- Thermal Physics I

Computer Graphics:

- Special Topics in Graphics: Physically-based Animation of Solids and Fluids
- Computational Photography
- Computer Game Programming
- Computer Graphics
- Parallel Computer Architecture and Programming

Machine Learning/Computer Vision:

- Visual Learning and Recognition
- Learning-Based Image Synthesis
- Intro to Machine Learning (PhD)

Awards

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| • CMU Richard A. Moore Award | 2024 |
| • Physics Cup Silver Medal | 2022 |
| • USA Physics Olympiad Top 50 | 2021 |
| • USA Math Olympiad Qualifier | 2020 |

Other Information

- Citizenship: United States
- Languages: English (native), Chinese/Mandarin (native)