

Ajay Srinivasan | Curriculum Vitae

3620 S. Vermont Ave – Los Angeles, CA 90089 – U.S.A

☎ +1 (602) 693 3257 • ✉ avsriniv@usc.edu

🌐 avsrinivasan.github.io

Education

University of Southern California

Los Angeles, CA

B.S. Mathematics, CGPA: 3.97

August 2021 – May 2025

Minor in Physics

Graduate Coursework: Algebra I-II, Algebraic Topology, Differential Geometry, Complex Analysis, Thermodynamics and Statistical Mechanics, Quantum Field Theory II (taken at Caltech), Topics in Algebraic Geometry (audited).

Experience

Vocational

Student-Athlete Academic Services, University of Southern California

Los Angeles, CA

Undergraduate Tutor, Mathematics and Physics

2023–Present

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Department of Mathematics, University of Southern California

Los Angeles, CA

Grader, MATH 226 (Calculus III)

2024–Present

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Academic

Department of Mathematics, The University of Chicago

Chicago, IL

Visiting Participant, Mathematics REU 2024

Summer 2024

Worked on infinite loop spaces in motivic homotopy theory

IAS/Park City Mathematics Institute, Institute for Advanced Study

Park City, UT

Undergraduate Summer School Participant

Summer 2023

Learned about quantum algorithms. Also worked on computing the number of holonomy vectors on Veech surfaces.

Dept. of Physics and Astronomy, University of Southern California

Los Angeles, CA

Undergraduate Researcher

2022–2024

Worked on the theory of binary Bose-Einstein condensates in two dimensions.

Community

SC Math Club

Los Angeles, CA

President

2023–Present

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Integral Bee Committee

Los Angeles, CA

Co-chair

2022–Present

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Writing

A motivic homotopical monadicity theorem

with J.P. May. Based on work done at the UChicago Mathematics REU 2024 (In progress)

Vortex stability in interacting Bose-Einstein condensates

with S. Haas and A. Wirthwein 2024

Talks

APS March Meeting 2024

Single Vortex Dynamics in Binary Bose-Einstein Condensates

Based on work done with S. Haas and A. Wirthwein

Minneapolis, MN

March 2024

Undergraduate Talks, IAS/Park City Mathematics Institute 2023

Billiard Dynamics on the Double Pentagon

Delivered with H. Malik, S. Rothstein, N. Ringrose, and E. Brodsky

Park City, UT

August 2023

Honors and Scholarships

Haltom Sr. Endowed Scholarship and Gleberman Endowed Scholarship

2024

Awarded by USC Dornsife

Lick Scholarship

2023, 2024

Awarded by the USC Dept. of Physics & Astronomy for conference travel

to Strings & Geometry and APS March Meeting

Honorable Mention in the Physical Sciences, Math, and Engineering Category

2023

USC Undergraduate Research Symposium

for *Collision Dynamics of Bose-Einstein Condensates in Two Spatial Dimensions*

USC Dornsife Dean's List

Fall 2021 – Spring 2023

USC Department of Mathematics Outreach Award

2022

Languages (computer and otherwise)

Computer: Python, Mathematica, MATLAB, Arduino, C++.

Human: English (native), Tamil (native), French (proficient).

Interests

Birational geometry, homological mirror symmetry, and stable homotopy theory. Also, holography and flux compactifications in string theory.