Curriculum Vitae
Yumin Shen

Personal Information

Email: yumin.shen@wisc.edu
Country of Citizenship: China
City of birth: Shanghai, China

Education

University of Wisconsin–Madison Madison, WI, USA	2024 – Now
Master of Arts in Mathematics.	
The Ohio State University Columbus, OH, USA	2022 – 2024
Bachelor of Science in Mathematics, *Summa Cum Laude*.	
Shanghai University Shanghai, China	2019 – 2022
Transferred out, majored in Telecommunication Engineering.	

Awards, Competitions, Honors, and Scholarships

2024 Grace Bareis Math Prize Scholarship	$300
The Ohio State University	
2024 Gordon Mathematics Competition	1st Place
The Ohio State University	
Undergraduate Research Scholarship	$1875
The Ohio State University	
2023 Grace Bareis Math Prize Scholarship	$200
The Ohio State University	
2023 Gordon Mathematics Competition	2nd Place
The Ohio State University	
13th China Mathematics Competition for College Students	1st Prize
Chinese Math Society	Dec 2021
13th Shanghai Mathematics Competition for College Students	1st Prize
Shanghai Math Society	Dec 2021
2021 Shanghai University Mathematics Competition	2nd Prize
Department of Mathematics, Shanghai University	Sep 2021
2020 Shanghai University Physics Competition	2nd Prize
Department of Physics, Shanghai University	Dec 2020
12th China Mathematics Competition for College Students	3rd Prize
Chinese Math Society	Dec 2020
12th Shanghai Mathematics Competition for College Students	3rd Prize
Shanghai Math Society	Dec 2020
2020 Shanghai University Mathematics Competition	3rd Prize
Department of Mathematics, Shanghai University	Nov 2020
Academic Scholarship	¥500
Shanghai University	Nov 2020

Other Experiences, Researches, and Workshops

Anosov magnetic flows on surfaces   arXiv: [2406.18735](#)
With James Marshall Reber

Using the quotient bundle introduced by Wojtkowski, we give necessary and sufficient conditions for a magnetic flow on a closed, oriented surface to be Anosov.

Knots and Graphs   [Link to Webpage](#)
The Ohio State University

Presentations and Posters

"Universal Cover of Non-Positively Curved Surface"   [Slides](#)
Directed Reading Program SP24

Gave a presentation on Cartan-Hadamard Theorem and Hadamard-Lévy Theorem. Introduced enough background knowledge and emphasized on applications of covering space.

"Some Algebraic Structures of Links: from 0 to ε"   [Slides](#)
Knots and Graphs 2023

Gave a presentation introducing braid group and its representation in Temperley-Lieb algebra, and get Jones polynomial in an algebraic way. Enough background knowledge introduced.

"Alternating knots and Tait Conjecture"   [Slides](#)
Knots and Graphs 2023

Gave a presentation on alternating knots and Tait conjecture as an application of Jones Polynomial.

"Fundamental Theorem of Riemannian Geometry"   [Poster](#)
Cycle Conference 2023

Made a poster on smooth manifolds, tangent bundles, vector fields, Riemannian manifolds, affine connection, existence and uniqueness of the Levi-Civita connection, geodesics defined by Euler-Lagrange equation and geodesics defined by affine connection, and their local consistency under Levi-Civita connection.

"The Invariant Subspace Problem"   [Slides](#)
Directed Reading Program SP23

Gave a presentation on Banach space, bounded linear operator, compact operator, Banach algebra, spectrum of a bounded linear operator, spectral radius formula, eigenvalue of compact operator, and the Lomonosov invariant subspace theorem of compact operators.

"Measure, Integration and Dominated Convergence Theorem"
Directed Reading Program AU22

Gave a chalk talk on Lebesgue measure, integration, Dominated Convergence Theorem and some examples.

Other Skills

Chinese   Native

English   Proficient

Japanese   Basic Proficiency

Programming languages
C, C++, Python, Matlab, Assembly Languages of AT89C51.