

Curriculum Vitae

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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 Master of Arts in Mathematics.	2024 – Now
The Ohio State University Columbus, OH, USA Bachelor of Science in Mathematics, <i>Summa Cum Laude</i> .	2022 – 2024
Shanghai University Shanghai, China Transferred out, majored in Telecommunication Engineering.	2019 – 2022

Awards, Competitions, Honors, and Scholarships

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

¹Update: July 10, 2024

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.