

Curriculum Vitae

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Personal Information

Name: Yumin Shen

Email: shen266@math.wisc.edu

Education

University of Wisconsin–Madison Madison, WI, USA

Master of Arts in Mathematics

2024 – Now
(Expected June 2025)

The Ohio State University Columbus, OH, USA

Bachelor of Science in Mathematics, *Summa Cum Laude*, May 2024

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

Department of Mathematics, The Ohio State University

\$300

2024 Gordon Mathematics Competition

Department of Mathematics, The Ohio State University

1st Place

Undergraduate Research Scholarship

Department of Mathematics, The Ohio State University

\$1875

2023 Grace Bareis Math Prize Scholarship

Department of Mathematics, The Ohio State University

\$200

2023 Gordon Mathematics Competition

Department of Mathematics, The Ohio State University

2nd Place

13th China Mathematics Competition for College Students

Chinese Math Society

1st Prize

13th Shanghai Mathematics Competition for College Students

Shanghai Math Society

1st Prize

2021 Shanghai University Mathematics Competition

Department of Mathematics, Shanghai University

2nd Prize

2020 Shanghai University Physics Competition

Department of Physics, Shanghai University

2nd Prize

12th China Mathematics Competition for College Students

Chinese Math Society

3rd Prize

12th Shanghai Mathematics Competition for College Students

Shanghai Math Society

3rd Prize

2020 Shanghai University Mathematics Competition

Department of Mathematics, Shanghai University

3rd Prize

Academic Scholarship

Shanghai University

¥500

¹Last Modified: September 13, 2024

Employment

At University of Wisconsin-Madison

Fall 2024: Grader for Math 322: Applied Mathematical Analysis (Partial Differential Equations and Special Functions)

Instructor: Saverio Spagnolie

Researches and Workshops

Anosov magnetic flows on surfaces

June 2024

Joint with James Marshall Reber

Submitted, [arXiv: 2406.18735](#)

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

The Ohio State University

[Link to Webpage](#)

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 was 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

Elementary Proficiency

Programming languages

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