

# Curriculum Vitae

[Click for Update](#)<sup>1</sup>

## Personal Information

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Name: Yumin Shen

Email: shen266@math.wisc.edu

## Education

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**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

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**2024 Grace Bareis Math Prize Scholarship**

\$300

Department of Mathematics, The Ohio State University

**2024 Gordon Mathematics Competition**

1<sup>st</sup> Place

Department of Mathematics, The Ohio State University

**Undergraduate Research Scholarship**

\$1875

Department of Mathematics, The Ohio State University

**2023 Grace Bareis Math Prize Scholarship**

\$200

Department of Mathematics, The Ohio State University

**2023 Gordon Mathematics Competition**

2<sup>nd</sup> Place

Department of Mathematics, The Ohio State University

**13<sup>th</sup> China Mathematics Competition for College Students**

1<sup>st</sup> Prize

Chinese Math Society

**13<sup>th</sup> Shanghai Mathematics Competition for College Students**

1<sup>st</sup> Prize

Shanghai Math Society

**2021 Shanghai University Mathematics Competition**

2<sup>nd</sup> Prize

Department of Mathematics, Shanghai University

**2020 Shanghai University Physics Competition**

2<sup>nd</sup> Prize

Department of Physics, Shanghai University

**12<sup>th</sup> China Mathematics Competition for College Students**

3<sup>rd</sup> Prize

Chinese Math Society

**12<sup>th</sup> Shanghai Mathematics Competition for College Students**

3<sup>rd</sup> Prize

Shanghai Math Society

**2020 Shanghai University Mathematics Competition**

3<sup>rd</sup> Prize

Department of Mathematics, Shanghai University

**Academic Scholarship**

¥500

Shanghai University

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<sup>1</sup>Last Modified: September 3, 2024

## Employment

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### 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

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### 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

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### "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 $\varepsilon$ "

[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

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Chinese (Mandarin, Shanghaiese dialect)

Native

English

Proficient

Japanese

Elementary Proficiency

Programming languages

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