Curriculum Vitae

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Yumin Shen

Personal Information

Email: shen266@math.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
Department of Mathematics, The Ohio State University

2024 Gordon Mathematics Competition — 1^{st} 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^{nd} Place
Department of Mathematics, The Ohio State University

13$^{\text{th}}$ China Mathematics Competition for College Students — 1^{st} Prize
Chinese Math Society

13$^{\text{th}}$ Shanghai Mathematics Competition for College Students — 1^{st} Prize
Shanghai Math Society

2021 Shanghai University Mathematics Competition — 2^{nd} Prize
Department of Mathematics, Shanghai University

2020 Shanghai University Physics Competition — 2^{nd} Prize
Department of Physics, Shanghai University

12$^{\text{th}}$ China Mathematics Competition for College Students — 3^{rd} Prize
Chinese Math Society

12$^{\text{th}}$ Shanghai Mathematics Competition for College Students — 3^{rd} Prize
Shanghai Math Society

2020 Shanghai University Mathematics Competition — 3^{rd} Prize
Department of Mathematics, Shanghai University

Academic Scholarship — ¥500
Shanghai University

[1]Update: August 5, 2024

Other Experiences, Researches, and Workshops

Anosov magnetic flows on surfaces arXiv: 2406.18735
With James Marshall Reber Submitted

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.