ANTHONY HONG

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EDUCATION

Washington University in St. Louis   St. Louis, United States
(in progress) B.S. in Economics & Computer Science; Second Major in Mathematics   August 2021 – May 2025

- Major GPA: 4.00/4.00
- Overall GPA: 3.99/4.00
- Selected courses:
  Math5045 Algebraic Topology (A); Math5046 Differential Topology (A); Math5051 Measure Theory and Functional Analysis I (A); Math5031 Algebra I (A+); Math5021 Complex Analysis I (A); CSE543 Algorithms of Nonlinear Optimization (A); Math494 Mathematical Statistics (A+); Math586 Network Statistics (A); Math350 Dynamical System and Chaos (A); CSE417T Introduction to Machine Learning (A); Econ413 Econometrics (A+); CSE546T Computational Geometry (in progress); Math5440 Big Data (in progress).

PUBLICATIONS

Study of Intergenerational Mobility and Urbanization Based on OLS Method and Ordered Probit Model
Xiao Hong.
2020 International Conference on Management Science Informatization and Economic Innovation and Development (MSIEID2020)

RESEARCH EXPERIENCE

Summer Research (with Prof. Renato Feres)   St. Louis, United States
Curvature of Cayley Graph of Certain Groups   July 2023-Now
A paper on efficient algorithms for computation of the Ollivier-Ricci curvature of Cayley graphs of certain groups, revealing geometric implications of commutativity and quasi-commutativity.
A follow-up project involves studying the Wasserstein distance of point measures evolving along their geodesics on Riemannian manifold.

Expository papers (projects for courses)   St. Louis, United States
Hex & Bouwer Paper Report   Spring 2022
A mid-term paper correcting and reestablishing the proof of equivalence between the Hex theorem and the Bouwer Fixed-Point in David Gale's "The Game of Hex and The Brouwer Fixed-Point Theorem."

Split Spoils: Solution to Stolen Necklace Problem Via Borksuk-Ulam Theorem   Spring 2022
A final paper solving the 2-dimensional Necklace division problem using the Borsuk-Ulam Theorem.

A Note about Algebraic and Geometric Characteristics of Archetypal Riemann Surfaces   Spring 2023
A summary of curvatures, isometry groups, and automorphism groups of 3 Riemann Surfaces in uniformization theorem.

Image Classification Using Wasserstein Distance from Monge-Kantorovich Solvers   Fall 2023
A survey of two algorithmic approaches, gradient descent and numerical partial differential equations (PDE), in solving Monge-Kantorovich problems, with a focus on their application in image classification.

SELECTED AWARDS AND HONORS

- Dean's List   Fall 2021-Fall 2023
- Tau Beta Pi Engineering Honor Society invitation (Upper 8th of McKelvey School of Engineering)

WORK EXPERIENCE

Washington University in St. Louis   St. Louis, United States
TA, Department of Mathematics and Statistics   Fall 2022-Spring 2024

- TA of Math5046 Differential Topology.
- Grader of the Math4111 Introduction to Analysis, Math4171 Topology I.

TALKS AND SEMINARS

The University of Chicago   Chicago, United States
Speaker at Midstates Consortium for Math and Science 23   Fall 2023

Washington University in St. Louis   St. Louis, United States
- Reading Group SP23: Algebraic Geometry.
- Reading Group FL23: Representation Theory.
- (online) UNC Undergraduate Analysis and PDE Seminar FL22-SP23.
- Convention on Stan Programming and Bayesian Modeling 23 Workshop.
- WUSTL Metamorphic Architecture Workshop 2019.

ADDITIONAL INFORMATION

Computer and Language Skills
- Bilingual: Chinese & English
- Software skills: Latex, Python, java, Matlab, Minitab, Octave, R, Stata

Interests
- Classical Music, Chinese Calligraphy, Printmaking & Travelling