

# Yukun DU

BIRTH: China | October 11th, 1994  
CURRENT CITY: Athens, GA  
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LAST UPDATED: November 10, 2025

## EMPLOYMENT

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AUG 2024 - CURRENT    Postdoctoral Research and Teaching Associate  
                                  *Department of Mathematics, University of Georgia, Athens, GA*  
                                  Research Mentor: Sa'ar HERSONSKY

## EDUCATION

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SEP 2019 - JUN 2024    Ph.D. in MATHEMATICS  
                                  *Department of Mathematics, University of California, Davis, Davis, CA*  
                                  Advisor: Michael KAPOVICH

SEP 2016 - JUL 2019    M.S. in MATHEMATICS  
                                  *Department of Mathematical Science, Tsinghua University, Beijing*  
                                  Advisor: Runliang LIN

SEP 2012 - JUL 2016    B.S. in MATHEMATICS & APPLIED MATHEMATICS  
                                  *Department of Mathematical Science, Tsinghua University, Beijing*  
                                  Advisor: Runliang LIN

## RESEARCH INTERESTS

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Geometric Group Theory  
Hyperbolic Geometry  
Lie Groups and Symmetric Spaces  
Trees and Tits Buildings

## PUBLICATIONS

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- [1] Y. Du. *Geometry of Selberg's bisectors in Jordan symmetric spaces*. In preparation. 2025.
  - [2] Y. Du and S. Hersonsky. *Free and Discrete Generating Pairs of Tree Automorphisms*. In preparation. 2025.
  - [3] Y. Du. *Busemann-Selberg Functions and Completeness for Dirichlet-Selberg domains in  $SL(n, \mathbb{R})/SO(n)$* . Submitted for publication. 2024. arXiv: [2412.06987](https://arxiv.org/abs/2412.06987).
  - [4] Y. Du. "Geometry of Selberg's bisectors in the symmetric space  $SL(n, \mathbb{R})/SO(n, \mathbb{R})$ ". In: *J. Lond. Math. Soc.* 110.4 (Oct. 2024).
  - [5] R. Lin and Y. Du. "Generalized Darboux Transformation for the Discrete Kadomtsev-Petviashvili Equation with Self-Consistent Sources". In: *Theoretical and Mathematical Physics* 196 (2018).

## CODE REPOSITORIES

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- Compute Dirichlet-Selberg Domains from generators in the group  $SL(3, \mathbb{R})$ .
  - GitHub: <https://github.com/BennieDu/Compute-Dirichlet-Selberg-Domains>

## SELECTED CONFERENCES & TALKS

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OCT 2025    AMS Sectional Meeting: Special Session on Topology and Group Actions  
                  St. Louis, MO

JUN 2025    Midwest Summer School in Geometry, Topology, and Dynamics  
                  Madison, WI

FEB 2025    Geometry and Topology Seminar at Georgia Institute of Technology  
                  Atlanta, GA

OCT 2023    Geometry and Topology seminar at Yale University

	New Haven, CT
OCT 2023	Number Theory Seminar at Rutgers University Zoom
MAY 2023	Graduate Student Geometry and Topology Conference Philadelphia, PA
OCT 2020	Moduli Spaces Seminar at the University of Melbourne Zoom

HONORS

2018	Excellent Student of Hua Luo-Geng Scholarship
2017	Excellent Student of Second-Class Scholarship
2015	Excellent Student of Science & Technology Innovation Scholarship
2012	Freshmen Scholarship

TEACHING EXPERIENCE

AUG 2024 - CURRENT	Teaching Fellow <i>Department of Mathematics, <b>University of Georgia</b>, Athens, GA</i> Taught Precalculus (MATH 1113, Fall 2024 and Fall 2025), Calculus III (MATH 2270, Spring 2025), and Complex Variables (MATH 4150, Fall 2025).
MAR 2020 - JUN 2024	Teaching Assistant <i>Department of Mathematics, <b>University of California, Davis</b>, Davis, CA</i> TA for courses including Precalculus (MAT 012), Short Calculus (MAT 016 series), Calculus for BioSci (MAT 017 series), and Modern Algebra (MAT 150A).
AUG - SEP 2023	Instructor for Calculus (MAT 021A)
AUG - SEP 2021	Instructor for BioCalculus (MAT 017C)
SEP 2016 - JAN 2019	Teaching Assistant <i>Department of Mathematical Science, <b>Tsinghua University</b>, Beijing</i> TA for courses including Calculus, Linear Algebra, and Complex Functions.

ADVISING

Spring 2025	Directed Reading Group Mentor to Nicolas TRULLOLS SANDINO (Bachelor Candidate, UGA) Topic: Hyperbolic Geometry and the Spacetime
2021 - 2022	Directed Reading Group Mentor to Tiching KAO (Bachelor Candidate, UC Davis) Topic: Groups and Symmetry

SKILLS AND ABILITIES

- **Mathematics:** Mathematica, SageMath, R
- **Programming:** C++, Python
- **Documentation:**  $\LaTeX$ , Microsoft Office

LANGUAGES

ENGLISH	●●●●○	C1
CHINESE (MANDARIN)	●●●●●	NATIVE
JAPANESE	●●○○○	B1

INTERESTS

- Running/Hiking
- Drawing
- Comics/Anime