

**CONTACT**

Assistant Professor of Mathematics  
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**EMPLOYMENT**

|                 |  |   |
|-----------------|--|---|
| 2023.08–        | Assistant Professor of Mathematics                 | Duke Kunshan University   |
| 2023.08–        | Assistant Professor of the Practice of DKU Studies | Duke University   |
| 2024.07–        | Adjunct of the Faculty of Graduate Studies         | Dalhousie University  |
| 2020.08–2023.07 | Lecturer in Mathematics                            | Duke Kunshan University   |
| 2020.08–2023.07 | Assistant Professor of the Practice                | Trinity College of Arts & Science, Duke University  |
| 2019.09–2020.07 | Research Associate                                 | Department of Mathematics and Statistics, Dalhousie University                                |
| 2017.09–2019.08 | Killam Postdoc Fellow                              | Department of Mathematics and Statistics, Dalhousie University                                |
| 2017.03–2017.08 | Research Scientist                                 | Johann Radon Institute for Computational and Applied Mathematics, Austrian Academy of Science |
| 2016.06–2017.02 | Postdoc Fellow                                     | Research Institute for Symbolic Computation, Johannes Kepler University                       |

**RESEARCH INTERESTS**

Symbolic Computation, Number Theory, Combinatorics, Special Functions, Information Geometry

**EDUCATION**

|                 |   |  |
|-----------------|---|--|
| 2011.08–2016.05 | Tulane University, Ph.D. in Mathematics   | <i>Advisor:</i> <u>Victor H. Moll</u>    |
| 2013.09–2014.02 | Research Institute for Symbolic Computation, Johannes Kepler University, Exchange Ph.D. Student | <i>Advisor:</i> <u>Carsten Schneider</u> |
| 2008.09–2010.07 | Beijing Institute of Technology, Master of Science  | <i>Advisor:</i> <u>Huafei Sun</u>        |
| 2004.09–2008.06 | Beijing Institute of Technology, Bachelor of Science  | <i>Thesis Advisor:</i> <u>Huafei Sun</u> |

**GRANT AWARDED**

|                 |  |  |
|-----------------|--|--|
| 2023.07–2025.06 | WHU-DKU Joint Grant Seed<br>DKU PI of “Wuhan University-Duke Kunshan University-Dalhousie University Research Platform on Combinatorics and Number Theory”                         | Wuhan University and Duke Kunshan University |
| 2023.01–2024.12 | Faculty Learning Community<br>Facilitated by Center for Teaching and Learning  | Duke Kunshan University                      |
| 2022.07–2024.06 | WHU-DKU Joint Grant Seed<br>Research team member of Dr. Dongmian Zou, Duke Kunshan University  | Wuhan University and Duke Kunshan University |
| 2022.01–2022.12 | Gradescopy Research Project Grant<br>Using Gradescopy in math courses, facilitated by Center for Teaching and Learning, Duke Kunshan University                                    | Gradescopy                                   |
| 2021.07–2023.06 | Interdisciplinary Seed Grant<br>Quantum algorithms for computational number theory, linear algebra, and combinatorics<br>Joint with Dr. Myung-Joong Huang, Duke Kunshan University | Duke Kunshan University                      |
| 2017.09–2019.08 | Killam Research Fund<br>Research Support for Killam Postdocs   | Killam Trust @ Dalhousie University          |

**PUBLICATIONS**

(While working on the projects, undergraduate students are marked with a \*)

**BOOK**

- 1 H. Sun, L. Peng, Y. Cheng, D. Li, and **L. Jiu**, *Mathematical Foundations of Information Geometry*, Science Press, Beijing, 2025. ISBN: 978-7-03-080107-4.

**PAPERS**

- 39 **L. Jiu** and D. Wang\*, On  $b$ -ary binomial coefficients with negative entries, Submitted for Publication.
- 38 S. Chern, **L. Jiu**, S. Li\*, and L. Wang, Leading coefficient in the Hankel determinants related to binomial and  $q$ -binomial transforms, submitted for publication.
- 37 **L. Jiu** and L. Peng, Information geometry and alpha-parallel prior of the beta-logistic distribution, *Comm. Statist. Theory Methods.* **54** (2025), 3292–3306.
- 36 S. Chern, **L. Jiu**, and I. Simonelli, A central limit theorem for a card shuffling problem, *J. Combin. Theory Ser. A* **214** (2025), Article 106048.
- 35 **L. Jiu** and Y. Li\*, Hankel determinants of certain sequences of Bernoulli polynomials: A direct proof of an inverse matrix entry from Statistics, *Contrib. Discrete Math.* **19** (2024), 64–84.
- 34 Q. Chen, S. Chern, and **L. Jiu**, Multi-headed lattices and Green functions, *J. Phys. A: Math. Theor.* **57** (2024) Article 465204.
- 33 S. Chern and **L. Jiu**, Hankel determinants and Jacobi continued fractions for  $q$ -Euler numbers, *C. R. Math. Acad. Sci. Paris* **362** (2024), 203–216.
- 32 K. Dilcher and **L. Jiu**, Hankel determinants of shifted sequences of Bernoulli and Euler numbers, *Contrib. Discrete Math.* **18** (2023), 146–175.
- 31 Z. Bradshaw, I. Gonzalez, **L. Jiu**, V. H. Moll, and C. Vignat, Compatibility of the method of brackets with classical integration rules, *Open Math.* **21** (2023), Article number: 20220581.
- 30 **L. Jiu** and D. Y. H. Shi, Moments and cumulants on identities for Bernoulli and Euler numbers, *Math. Reports* **24** (2022), 643–650.
- 29 **L. Jiu**, I. Simonelli, and H. Yue\*, Loop Decompositions of Random Walks and Nontrivial Identities of Bernoulli and Euler Polynomials, *Integers* **22** (2022), A91.
- 28 K. Dilcher and **L. Jiu**, Hankel Determinants of sequences related to Bernoulli and Euler Polynomials, *Int. J. Number Theory* **18** (2022), 331–359.
- 27 K. Dilcher and **L. Jiu**, Orthogonal polynomials and Hankel determinants for certain Bernoulli and Euler polynomials, *J. Math. Anal. Appl.* **497** (2021), Article 124855.
- 26 I. Gonzales, **L. Jiu**, and V. H. Moll, An extension of the method of brackets. Part 2, *Open Math.* **18** (2020), 983–955.
- 25 **L. Jiu** and C. Koutschan, Calculation and properties of zonal polynomials, *Math. Comput. Sci.* **14** (2020), 623–640.
- 24 N. Takayama, **L. Jiu**, S. Kuriki, and Y. Zhang, Computations of the Expected Euler Characteristic for the Largest Eigenvalue of a Real Wishart Matrix, *J. Multivariate Anal.* **179** (2020), Article 104642.
- 23 **L. Jiu**, C. Vignat, and T. Wakhare, Analytic Continuation for Multiple Zeta Values using Symbolic Representations, *Int. J. Number Theory* **16** (2020), 579–602.
- 22 **L. Jiu** and C. Vignat, Connection coefficients for higher-order Bernoulli and Euler polynomials: a random walk approach, *Fibonacci Quart.* **57** (2019), 84–95.
- 21 **L. Jiu** and D. Y. H. Shi, Matrix representation for multiplicative nested sums, *Colloq. Math.* **158** (2019), 183–194.
- 20 **L. Jiu** and D. Y. H. Shi, Orthogonal polynomials and connection to generalized Motzkin numbers for higher-order Euler polynomials, *J. Number Theory* **199** (2019), 389–402.
- 19 I. Gonzalez, K. Kohl, **L. Jiu**, and V. H. Moll, The method of brackets in experimental mathematics, *Frontiers of Orthogonal Polynomials and q-Series*, Z. Nashed and X. Li eds., World Scientific Publishers, 2018.
- 18 **L. Jiu**, V. H. Moll, and C. Vignat, A symbolic approach to multiple zeta values at the negative integers, *J. Symbolic Comput.* **84** (2018), 1–13.
- 17 I. Gonzales, K. Kohl, **L. Jiu**, and V. H. Moll, An extension of the method of brackets. Part 1, *Open Math.* **15** (2017), 1181–1211.
- 16 **L. Jiu**, Integral representations of equally positive integer-indexed harmonic sums at infinity, *Research in Number Theory* **3** (2017), Article 3:10.
- 15 C. Li, E. Zhang, **L. Jiu**, and H. Sun, Optimal control on special Euclidean group via natural gradient descent algorithm, *Sci. China Inf. Sci.* **59** (2016), Article: 112203.
- 14 I. Gonzalez, **L. Jiu**, and V. H. Moll, Pochhammer symbol with negative indices. A new rule for the method of brackets, *Open Math.* **14** (2016), 681–686.

- 13 T. Amdeberhan, A. Dixit, X. Guan, **L. Jiu**, A. Kuznetsov, V. H. Moll, and C. Vignat, The integrals in Gradshteyn and Ryzhik. Part 30: trigonometric functions, *Scientia Series A: Mathematical Sciences* **27** (2016), 47–74.
- 12 T. Amdeberhan, A. Dixit, X. Guan, **L. Jiu**, V. H. Moll, and C. Vignat, A series involving Catalan numbers. Proofs and demonstrations, *Elem. Math.* **71** (2016), 109–121.
- 11 **L. Jiu** and C. Vignat, On binomial identities in arbitrary bases, *J. Integer Seq.* **19** (2016), Article 16.5.5.
- 10 **L. Jiu**, V. H. Moll, and C. Vignat, A symbolic approach to some identities for Bernoulli-Barnes polynomials, *Int. J. Number Theory* **12** (2016), 649–662.
- 9 A. Dixit, **L. Jiu**, V. H. Moll, and C. Vignat, The finite Fourier transform of classical polynomials, *J. Aust. Math. Soc.* **98** (2015), 145–160.
- 8 T. Amdeberhan, A. Dixit, X. Guan, **L. Jiu** and V. H. Moll, The unimodality of a polynomial coming from a rational integral. Back to the original proof, *J. Math. Anal. Appl.* **420** (2014), 1154–1166.
- 7 A. Byrnes\*, **L. Jiu**, V. H. Moll, and C. Vignat, Recursion rules for the hypergeometric zeta functions, *Int. J. Number Theory* **10** (2014), 1761–1782.
- 6 **L. Jiu**, V. H. Moll, and C. Vignat, Identities for generalized Euler polynomials, *Integral Transforms Spec. Funct.* **25** (2014), 777–789.
- 5 Z. Zhang, H. Sun, **L. Jiu**, and L. Peng, A natural gradient algorithm for stochastic distribution systems, *Entropy* **16** (2014), 4338–4352.
- 4 F. Zhang, H. Sun, **L. Jiu**, and L. Peng, The arc length variational formula on the exponential manifold, *Math. Slovaca* **63** (2013), 1101–1112.
- 3 L. Peng, H. Sun, and **L. Jiu**, The geometric structure of the Pareto distribution, *Bol. Asoc. Mat. Venez.* **14** (2007), 5–13.
- 2 **L. Jiu** and H. Sun, On minimal homothetical hypersurfaces, *Colloq. Math.* **109** (2007), 239–249.
- 1 X. Wang and **L. Jiu**, Characterizing hypersurfaces of generalized rotation through its normal lines, *Journal of Ningde Normal University (Natural Science)* **02** (2006), 117–119.

## ACADEMIC TALKS

- 48 **Hankel Determinants and Big  $q$ -Jacobi Polynomials for  $q$ -Euler Numbers**  
*The Third Joint SIAM/CAIMS Annual Meetings (AN25)*, Montréal, QC, Canada, July 28—Aug. 1, 2025.
- 47 **Examples of Computer Proofs: From Elementary to Recent Ones**  
*Invited Honours Seminar Talk*, Department of Mathematics and Statistics, Dalhousie University, Halifax, NS, Canada, Jan. 15, 2025.
- 46 **Multi-headed Lattices and Green Functions**  
*Invited Seminar Talk*, Department of Mathematics and Statistics, Dalhousie University, Halifax, NS, Canada, Oct. 8, 2024.
- 45  **$q$ -Analogue on Hankel Determinants: the  $q$ -Euler Numbers and the  $q$ -Binomial Transform**  
*Canadian Number Theory Association XVI*, Fields Institute, Toronto, ON, Canada, June 10–14, 2024.
- 44 **Shuffle to One, Shuffle to Normal**  
*Number Theory Seminar*, Department of Mathematics and Statistics, Dalhousie University, Halifax, NS, Canada, Jan. 31, 2024.
- 43 **Random Walk Models for Identities Involving Bernoulli and Euler Polynomials**  
*Number Theory Seminar*, Department of Mathematics and Statistics, Dalhousie University, Halifax, NS, Canada, Mar. 6, 2023.
- 42 **Random Walk Model on Finite Number of Sites**  
*Seminar*, School of Mathematics, Anhui University, Online, Oct. 19, 2022.
- 41 **Bernoulli Symbol and Multiple Zeta Function at Non-negative Integers**  
*The First International Conference on Multiple Zeta Values and Related Topics*, Online, Aug. 08–09, 2022.
- 40 **Hankel Determinants of Certain Sequences of Bernoulli and Euler Polynomials**  
*Seminar*, Department of Mathematics, Zhejiang Sci-Tech University, Online, June 12, 2022.

- 39 **Bernoulli and Euler Symbols: Umbral Calculus, Random Variables, and Multiple Zeta Values**  
*Duke Kunshan University-Shanghai Jiao Tong University Joint Workshop for Mathematics and Data Science*, Shanghai, P. R. China, Jan. 5, 2022.
- 38 **Random Walk Models for Non-trivial Identities Involving Bernoulli and Euler Polynomials of Higher-orders**  
*Suzhou Area Youth Mathematicians 2nd Annual Workshop*, Soochow University, Kunshan, Suzhou, Jiangsu Province, P. R. China, Sept. 25–26, 2021.
- 37 **Random Walks and Identities Involving Bernoulli and Euler Polynomials of Higher-order Seminar**, Institute of Statistics and Big Data, Renmin University of China, Beijing, P. R. China, June 18, 2021.
- 36 **Examples on Computer Proofs**  
*Seminar*, Wuhan University, Wuhan, Hubei Province, P. R. China, May 28, 2021.
- 35 **Hankel Determinant of Sequences Related to Bernoulli and Euler Polynomials**  
*DKU-WHU Math and Stat Academic Conference*, Wuhan University, Wuhan, Hubei Province, P. R. China, May 27, 2021.
- 34 **Hankel Determinant on Sequences Related to Bernoulli and Euler Polynomials**  
*Suzhou Area Youth Mathematicians 1st Annual Workshop*, Duke Kunshan University, Kunshan, Suzhou, Jiangsu Province, P. R. China, Nov. 14–15, 2020.
- 33 **Three Examples on Computer Proofs**  
*Zu Chongzhi Colloquium Series*, Duke Kunshan University, Kunshan, Suzhou, P. R. China, Nov. 6, 2020.
- 32 **Introduction to Four Symbolic Integration Methods: Two Examples**  
*Number Theory Seminar, Department of Mathematics and Statistics, Dalhousie University*, Halifax, NS, Canada, Sept. 23, 2019
- 31 **On  $b$ -ary Binomial Coefficients**  
*Number Theory Seminar, Department of Mathematics and Statistics, Dalhousie University*, Halifax, NS, Canada, Sept. 16, 2019
- 30 **Orthogonal Polynomials for Higher-order Euler Polynomials**  
*15th International Symposium on Orthogonal Polynomials, Special Functions and Applications*, Hagenberg, Austria, July 22–26, 2019.
- 29 **On Harmonic Sums: Integral and Matrix Representations with Connections to Partition-theoretic Generalization of the Riemann Zeta-function and Random Walks**  
*Analytic and Combinatorial Number Theory: The Legacy of Ramanujan (A conference in honor of Bruce C. Berndt's 80th birthday)*, University of Illinois at Urbana-Champaign, Urbana, IL, U. S. A., June 6–9, 2019.
- 28 **Random Walk Approaches to Identities on Higher-order Bernoulli and Euler Polynomials**  
*American Mathematical Society Spring Southeastern Sectional Meeting*, Auburn University, Auburn, AL, U. S. A., Mar. 15–17, 2019.
- 27 **Random Walk & Identities**  
*Number Theory Seminar, Department of Mathematics and Statistics, Dalhousie University*, Halifax, NS, Canada, Feb. 25, 2019
- 26 **Matrix Representation for Multiplicative Nested Sums**  
*2019 Joint Mathematics Meetings*, Baltimore, MD, U. S. A., Jan. 16–19, 2019.
- 25 **Orthogonal Polynomials for Bernoulli and Euler Polynomials**  
*Number Theory Seminar, Department of Mathematics and Statistics, Dalhousie University*, Halifax, NS, Canada, Jan. 7, 2019
- 24 **Three Examples of Computer Proofs of Combinatorial Results**  
*Honours Seminar, Department of Mathematics and Statistics, Dalhousie University*, Halifax, NS, Canada, Oct. 17, 2018
- 23 **Matrix Representation for Multiplicative Nested Sums**  
*Number Theory Seminar, Department of Mathematics and Statistics, Dalhousie University*, Halifax, NS, Canada, Sept. 21, 2018.

- 22 **Bernoulli Symbol and Sum of Powers**  
*6th International Congress on Mathematical Software*, University of Notre Dame, Notre Dame, IN, U. S. A., July 24–27, 2018.
- 21 **Random Walks and Identities for High-order Bernoulli and Euler Polynomials**  
*18th International Conference on Fibonacci Numbers and Their Applications*, Dalhousie University, Halifax, NS, Canada, July 1–8, 2018.
- 20 **Matrix Representations for Bernoulli and Euler Polynomials**  
*2018 Canadian Mathematical Society Summer Meeting*, University of New Brunswick, Fredericton, NB, Canada, June 1–4, 2018.
- 19 **Two Sequences Related to Bernoulli and Euler Numbers**  
*Number Theory Seminar, Department of Mathematics and Statistics, Dalhousie University*, Halifax, NS, Canada, May 30, 2018.
- 18 **Hidden Walks**  
*Number Theory Seminar, Department of Mathematics and Statistics, Dalhousie University*, Halifax, NS, Canada, Feb. 26, 2018.
- 17 **Introduction to Zonal Polynomials**  
*Number Theory Seminar, Department of Mathematics and Statistics, Dalhousie University*, Halifax, NS, Canada, Jan. 22, 2018.
- 16 **The Probabilistic and Combinatorial Interpretations of the Bernoulli Symbol**  
*2017 Canadian Mathematical Society Winter Meeting*, University of Waterloo, Waterloo, ON, Canada, Dec. 8–11, 2017.
- 15 **Bernoulli Symbol on Multiple Zeta Values at Negative Integers**  
*23rd Conference on Applications of Computer Algebra (Commemorating the heritage of Jonathan Michael Borwein)*, Jerusalem College of Technology, Jerusalem, Israel, July 17–21, 2017.
- 14 **Bernoulli Symbol  $\mathcal{B}$ : from Umbral Calculus to Random Variable and Combinatorics**  
*Number Theory Seminar, Department of Mathematics and Statistics, Dalhousie University*, Halifax, NS, Canada, Oct. 13, 2017.
- 13 **Visualization of Bernoulli Numbers**  
*Colloquium, Department of Mathematics and Statistics, Dalhousie University*, Halifax, NS, Canada, Oct. 12, 2017.
- 12 **On Bernoulli Symbol  $\mathcal{B}$**   
*Klagenfurt-Linz-Wien Workshop*, Riefnitz, Austria, May 3–6, 2017.
- 11 **The Method of Brackets (MoB) and Integrating by Differentiating (IbD) Method**  
*Laboratoire des Signaux et Systèmes, Université Paris Sud XI*, Orsay, France, Dec. 9, 2016.
- 10 **“Random Walks” for Harmonic Sums**  
*SFB Statusseminar*, Strobl, Austria, Nov. 27–30, 2016.
- 9 **A Hot Pot**  
*Algorithmic Combinatorics Seminar*, Research Institute for Symbolic Computations, Johannes Kepler University, Hagenberg im Mühlkreis, Austria, Oct. 5, 2016.
- 8 **On Binomial Identities in Arbitrary Bases**  
*Beijing Key Laboratory on Mathematical Characterization, Analysis and Applications of Complex Information*, Beijing Institute of Technology, Beijing, China, July 26, 2016.
- 7 **Random Walk: A Probabilistic and Geometric Approach to Number Theory**  
*International Conference on Mathematical Characterization, Analysis and Applications of Complex Information*, Beijing Institute of Technology, Beijing, China, July 19–20, 2016.
- 6 **The Method of Brackets**  
*5th International Congress on Mathematical Software*, The Zuse Institute Berlin, Berlin, Germany, July 11–14, 2016.
- 5 **The Method of Brackets**  
*Algorithmic Combinatorics Seminar*, Research Institute for Symbolic Computations, Johannes Kepler University, Hagenberg im Mühlkreis, Austria, June 22, 2016.

**4 Binomial Identities in Arbitrary Bases**

*Graduate Students Colloquium, Department of Mathematics, Tulane University, New Orleans, LA., U. S. A., Mar. 8, 2016*

**3 On Bernoulli Symbol  $\mathcal{B}$  and Its Applications**

*Center for Combinatorics, Nankai University, Tianjin, China, July 8, 2015.*

**2 Recursion Rules for the Hypergeometric Zeta Functions**

*Midwest Number Theory Conference for Graduate Students and Recent PhDs, X, University of Illinois at Urbana-Champaign, Urbana, IL, U. S. A., June 3–4, 2014.*

**1 Implementation of an Algorithm on Converting Sums into Nested Sums**

*Laboratoire des Signaux et Systèmes, Université Paris Sud XI, Orsay, France, Jan. 8, 2014.*

**HONORS AND AWARDS**

|      |   |  |
|------|---|--|
| 2016 | Tea Doctor (for organizing Tea Time)                                      | Depart. of Math., Tulane University                |
| 2015 | Tea Master (for organizing Tea Time)                                      | Depart. of Math., Tulane University                |
| 2014 | Excellence in Mathematics   | Depart. of Math., Tulane University                |
| 2013 | Excellent Graduate Student Teacher  | Depart. of Math., Tulane University                |
| 2008 | Outstanding Graduates   | Beijing Institute of Technology                    |
| 2007 | National Scholarship  | Department of Education, P. R. China               |
| 2006 | China Aerospace Science and Technology Corporation Scholarship, 2nd Prize | China Aerospace Science and Technology Corporation |

**TEACHING EXPERIENCE**

|             |              |   |                         |
|-------------|--------------|---|-------------------------|
| 2025 Winter | MATH 6200    | Integer Partitions and $q$ -Series                | Dalhousie University    |
| 2024 Fall   | MATH 307     | Complex Analysis                                  | Duke Kunshan University |
| 2023 Fall   | MATH 105     | Calculus  | Duke Kunshan University |
|             | MATH 202     | Linear Algebra                                    | Duke Kunshan University |
|             | MATH 105     | Calculus  | Duke Kunshan University |
|             | MATH 301     | Advanced Introduction to Probability              | Duke Kunshan University |
| 2023 Spring | MATH 205     | Probability and Statistics                        | Duke Kunshan University |
|             | MINITERM 102 | Experimental Mathematics and Symbolic Computation | Duke Kunshan University |
| 2022 Fall   | INDSTU 391   | Introduction to Algebraic Geometry                | Duke Kunshan University |
|             | MATH 105     | Calculus  | Duke Kunshan University |
|             | MATH 306     | Number Theory                                     | Duke Kunshan University |
|             | MATH 301     | Advanced Introduction to Probability              | Duke Kunshan University |
| 2022 Spring | INDSTU 391   | Variational Quantum Algorithms                    | Duke Kunshan University |
|             | MATH 201     | Multivariable Calculus                            | Duke Kunshan University |
|             | MATH 301     | Advanced Introduction to Probability              | Duke Kunshan University |
|             | MATH 201     | Multivariable Calculus                            | Duke Kunshan University |
| 2021 Fall   | MATH 105     | Calculus  | Duke Kunshan University |
|             | INDSTU 391   | Riemann Zeta-Function                             | Duke Kunshan University |
|             | INDSTU 391   | Quantum Algorithm                                 | Duke Kunshan University |
|             | MATH 306     | Number Theory                                     | Duke Kunshan University |
|             | INDSTU 391   | Combinatorics                                     | Duke Kunshan University |
| 2021 Spring | MATH 205     | Probability and Statistics                        | Duke Kunshan University |
|             | MATH 301     | Advanced Introduction to Probability              | Duke Kunshan University |
| 2020 Fall   | MATH 105     | Calculus  | Duke Kunshan University |

|             |           |                                    |                         |
|-------------|-----------|------------------------------------|-------------------------|
| 2019 Summer | MATH 201  | Multivariable Calculus             | Duke Kunshan University |
| 2019 Winter | MATH 1030 | Matrix Theory and Linear Algebra I | Dalhousie University    |
| 2016 Spring | MATH 3080 | Introduction to Complex Variables  | Dalhousie University    |
| 2015 Fall   | MATH 1060 | Long Calculus II                   | Tulane University       |
| 2015 Spring | MATH 1310 | Consolidated Calculus              | Tulane University       |
| 2014 Summer | MATH 1210 | Long Calculus I                    | Tulane University       |
|             | MATH 1160 | Long Calculus II                   | Tulane University       |

**ACADEMIC SERVICES AND MEMBERSHIPS**

- 2025– Reviewer for Mathematical Reviews @ AMS  
 2025 Organizer of the mini-symposium *Special Functions with Applications in Number Theory and Combinatorics* at The Third Joint SIAM/CAIMS Annual Meetings, July 27—Aug. 1, 2025, Montreal, QC, Canada  
 2014– Reviewer for journals including: Journal of Number Theory, International Journal of Number Theory, Journal of Difference Equations and Applications, etc.

**DEPARTMENTAL AND UNIVERSITY SERVICE**

- |           |  |                         |
|-----------|--|-------------------------|
| 2021–     | Organizer of the Discrete Math Seminar                           | Duke Kunshan University |
| 2024      | Member of 2025 Undergraduate Recruitment & Admissions Evaluation | Duke Kunshan University |
| 2017–2020 | Organizer of the Number Theory Seminar                           | Dalhousie University    |
| 2012–2016 | Organizer of the Tee Time  | Tulane University       |

**STUDENT MENTORING, ADVISING, AND RESEARCH ACTIVITIES**

## UNDERGRADUATE ACADEMIC ADVISOR @ DUKE KUNSHAN UNIVERSITY

| Class of     | Number of Students | Names   |
|--------------|--------------------|---|
| 2022         | 1                  | Ziang Zhou  |
| 2023         | 6                  | Heng Yue, Junyu Shi, Lezhen Qin, Mengfan Gong, Yushan Gu, Shi Wang  |
| 2024         | 3                  | Jeff Ulmasov, Jing Gu, Yuekang Li                                   |
| 2025         | 1                  | Jiaqi Wang  |
| 2026         | 3                  | Baoguanyan Kang, Dalia Guerrero Flores, Lei Wu,                     |
| 2027         | 4                  | Jinggege Li, Rui Ling, Shengjie Bai, Yunjie Guo                     |
| 2028         | 5                  | Binghan Cheng, Feiyang Zhong, Rustam Safaev, Shengyu Xu, Yihang Yin |
| 2029         | 2                  | Zidi Gao, Wangzi Ding   |
| <b>TOTAL</b> | <b>25</b>          |   |

UNDERGRADUATE SIGNATURE WORK (SW)<sup>1</sup> (≡ HONOR THESIS) MENTOR @ DUKE KUNSHAN UNIVERSITY

| Class of     | Number of Projects | Names  |
|--------------|--------------------|--|
| 2023         | 7                  | Heng Yue, Junyu Shi, Lezhen Qin, Mengfan Gong, Siyuan Wu, Ye Li, Youzhang He |
| 2024         | 3                  | Hongkai Zhu, Matilde Molinari Giglietti, Shuhan Li                           |
| <b>TOTAL</b> | <b>10</b>          |  |

## UNDERGRADUATE STUDENT RESEARCH PROJECTS

<sup>1</sup><https://signature-work.dukekunshan.edu.cn/signature-work-overview/>

| Year | Student(s)                          | Project(s)   | Result/Comments  |
|------|-------------------------------------|--|--|
| 2021 | Heng Yue<br>Ye Li                   | Loop Decomposition of Random Walks<br>Hankel Determinants on Some sequences          | [29] in the Publication section<br>[35] in the Publication section |
| 2022 | Siyuan Wu<br>Duanduan Wang          | The Method of Brackets<br>$b$ -ary Related Sequences                                 | Mathematica Package<br>[38] in the Publication section             |
| 2023 | Shuhan Li<br>Hongkai Zhu            | Hankel Determinants and Continued Fractions<br>Weakly Increasing Trees on a Multiset | [39] in the Publication section<br>Mathematica Package             |
| 2024 | Jonah Barrington<br>Julius Frizzell | On Cyclotomic Polynomials<br>Factorization of Large Primes                           | Co-mentored with K. Dilcher @<br>Dalhousie University              |

**RELEVANT SKILLS***Language:* Mandarin (native), English (fluent)*Computer:* Mathematica, SageMath, Python, Maple, L<sup>A</sup>T<sub>E</sub>X, LyX*Packages:* Zonal.sage <https://jiulin90.github.io/Packages/Zonal.sage>  
BNE.sage <https://jiulin90.github.io/Packages/BNE.sage>