

# Diyath Nelaka Pannipitiya

402 N Blackford St, LD 255. Indianapolis, IN 46202  
• Email: dinepann@iu.edu • Phone: (317) 640-1246

## Research Interests

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Complex dynamics; Symbolic dynamics; Ergodic theory; Applications of dynamical systems in other scientific fields; Philosophy and history of mathematics.

## Education

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**Indiana University Indianapolis** 2018-2024  
Ph.D. in Mathematics  
Dissertation: *A DYNAMICAL APPROACH TO THE POTTS MODEL ON CAYLEY TREE*  
Advisors: *Dr. Bruce P. Kitchens and Dr. Roland K. W. Roeder*

**University of Colombo** 2011-2015  
B.S. in Mathematics

## Preprints and Publications

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- *A DYNAMICAL APPROACH TO STUDYING THE LEE-YANG ZEROS FOR THE POTTS MODEL ON THE CAYLEY TREE* with Roland Roeder. Accepted: Journal of Statistical Physics. arXiv:2509.11505.
- *To Symbolic Dynamics Through the Thue-Morse Sequence*. Submitted. arXiv:2402.07015
- *A Note on the Hyperbolicity of the Non-Wandering Sets of Real Quadratic Maps*. Submitted. arXiv:2402.05433
- *Cantor-Like Sets Constructed in Tremas*, The Mathematics Student, 2017

## Teaching Experience

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★ **Primary Instructor (Full Course Responsibility)**

Indiana University Indianapolis

- MATH-I 111: Algebra (Spring 2026)
- MATH-I 110: Fundamentals of Algebra (Fall 2025) - Two Sections
- MATH-I 154: Trigonometry (Spring 2025) - Two Sections
- MATH-I 231: Calculus for the Life Sciences I (Fall 2024) - Two Sections
- MATH-17100: Multidimensional Mathematics (Spring 2024 - Two Sections, Summer 2024)
- MATH-22100: Calculus for Technology I (Fall 2021)

- MATH-16600: Analytic Geometry and Calculus II (Fall 2022, Summer 2021, Spring 2021)
- MATH-M119: Brief Survey of Calculus I (Spring 2021): *Online*
- MATH-11000: Fundamentals of Algebra (Fall 2020): *Online*

### **Butler University**

- MA 125: Business Calculus (Fall 2025)

### **Ivy Tech (Ivy Online)**

- MATH 262 - Multivariate Calculus (Spring 2026)
- MATH 262 - Multivariate Calculus (Fall 2025)

### **★ Recitation and Support Roles**

### **Indiana University Indianapolis**

- MATH-16600: Calculus II (Recitation Instructor – Spring 2023, Spring 2021)
- MATH-26100: Multivariate Calculus (Grader – Fall 2018)
- MATH-35100: Elementary Linear Algebra (Grader – Spring 2019)
- MATH-26600: Ordinary Differential Equations (Grader – Spring 2019)
- MATH-M118: Finite Mathematics (Grader – Fall 2019, Spring 2020)

### **Awards and Honors**

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- 2025 Outstanding Graduate Student Teaching Award, Department of Mathematical Sciences, Indiana University Indianapolis.

### **Academic Appointments**

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- Adjunct Instructor, Indiana University Indianapolis - Spring & Fall 2025
- Adjunct Professor, Butler University - Fall 2025
- Adjunct Professor, Ivy Tech (Ivy Online) - Fall 2025
- AI Trainer Math Expert, Handshake MOVE Fellowship - from 05/30/2025
- Student Academic Appointee (Graduate Teaching Assistant), IUPUI – 2018–2024
- Tutor, Mathematics Assistance Center (MAC), IUPUI – Summers 2019, 2023
- Instructor & Course Coordinator, Information and Technology Unit 2, Deans office, Faculty of Science, University of Colombo, Sri Lanka - 2016-2018

## Talks and Presentations

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- “Phase Transitions in the Potts Model on Cayley Tree,” 58th Spring Topology and Dynamical Systems Conference, Christopher Newport University, Newport News, VA - 03/06/2025 (Invited Talk)
- “A Dynamical Approach to the Potts Model,” AMS Sectional Meeting: Panorama of Holomorphic Dynamics, University of Wisconsin-Milwaukee - 04/20/2024 (Invited Talk)
- “Active/Passive Dichotomy in Holomorphic Dynamics (Mini Talk),” Midwest Dynamical Systems Early Career Conference, The Ohio State University - 05/14/2024
- “Some Aspects of Symbolic Dynamics,” Graduate Seminar, IUPUI - 12/08/2023
- “A Dynamical Approach to the Potts Model,” Dynamics Seminar, IUPUI - 10/26/2023
- “Grover’s Algorithm,” Graduate Seminar, IUPUI — 03/24/2023
- “On the Thue-Morse Sequence (Mini Talk),” Midwest Dynamical Systems Early Career Conference, University of Notre Dame - 05/26/2022
- “Topological Entropy and the Variational Principle,” Complex Dynamics School, IUPUI - 03/14/2022
- “Quasi-Isometry,” Graduate Seminar, IUPUI - 02/25/2022
- “The Variational Principle,” Graduate Seminar, IUPUI - 09/03/2021
- “Norms of Vectors, Functions and Matrices,” Graduate Seminar, IUPUI - 02/12/2021
- “Gödel’s Theorems,” Graduate Seminar, IUPUI - 10/25/2019

## Conferences and Workshops

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| • <b>58th Spring Topology and Dynamical Systems Conference</b><br>Christopher Newport University at Newport News, VA. | March 6-8, 2025   |
| • <b>2024 Midwest Dynamical Systems Early Career Conference</b><br>The Ohio State University.                         | May 14-15, 2024   |
| • <b>AMS Sectional Meeting: Panorama of Holomorphic Dynamics</b><br>The University of Wisconsin–Milwaukee.            | April 20-21, 2024 |
| • <b>2023 Midwest Dynamical Systems Conference</b><br>University of Illinois at Chicago.                              | Oct. 20-22, 2023  |
| • <b>Midwestern Workshop on Asymptotic Analysis</b><br>Indiana University–Purdue University Indianapolis.             | Oct. 13-15, 2023  |
| • <b>2022 Midwest Dynamical Systems Conference</b><br>Indiana University–Purdue University Indianapolis.              | Nov. 18–20, 2022  |
| • <b>Midwest Dynamical Systems Early Career Conference (zoom)</b><br>University of Notre Dame.                        | May 26-27, 2022   |

- **Geometry, Groups & Dynamics Workshop** April 9, 2022  
Indiana University–Purdue University Indianapolis.
- **2021 Midwest Dynamical Systems Conference** Nov. 12-14, 2021  
Northwestern University, Evanston, Illinois.
- **Houston Summer School on Dynamical Systems** May 30-June 6, 2019  
University of Houston, Houston, TX.

## Professional Service

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- Vice President, AMS IUPUI Graduate Chapter: 2020-2022
- Co-Organizer - AMS Student Colloquia and Graduate Students' Math Jams
- Led Qualifying Exam Workshops in Complex Analysis, Real analysis, and Measure Theory - AMS IUPUI Graduate Chapter

## Technical Skills

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- Programming: Mathematica, MATLAB, Maple, Dynamics Explorer.
- Typesetting: LaTeX

## References

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- **Dr. Jeffrey X. Watt**, Professor and Department Chair, Department of Mathematical Sciences, Indiana University Indianapolis.  
Email: jwatt@iu.edu — Phone: (317) 274-4070
- **Dr. Roland K. W. Roeder**, Professor of Mathematics, Department of Mathematical Sciences, Indiana University Indianapolis.  
Email: roederr@iu.edu — Phone: (317) 274-6924
- **Dr. Bruce P. Kitchens**, Professor of Mathematics, Department of Mathematical Sciences, Indiana University Indianapolis.  
Email: bkitchen@iu.edu — Phone: (317) 274-6933
- **Dr. William Geller**, Associate Professor of Mathematics, Department of Mathematical Sciences, Indiana University Indianapolis.  
Email: wgeller@iu.edu — Phone: (317) 278-2465
- **Dr. Noor F. Hussain**, Associate Professor F4, Ivy Tech Community College, Indianapolis.  
Email: nhussain1@ivytech.edu — Phone: (317)-921-4800.
- **Dr. Scott Kaschner**, Associate Professor of Mathematics and Department Chair, Department of Mathematics and Actuarial Science, Butler University.  
Email: skaschne@butler.edu — Phone: (317)-940-8975