

Yana Mohanty

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Summary

Founder and CEO of Imathgination LLC, which designs and markets engaging, imaginative hands-on tools for exploring a wide range of mathematical concepts. These tools serve the teachers, parents, K-12 students, and adults looking for a mental challenge.

Education

Ph. D. in Mathematics, UCSD, 2002

M.S. in Electrical Engineering, University of Massachusetts, Amherst, 1993

B.S. Magna Cum Laude in Electrical Engineering, UCLA, 1989

Current Professional Activities

Founder, Imathgination LLC, 2014

Recent Speaking Engagements

- University of San Diego STEAM Youth and Community Conference, August 2023.
- Queensland Association of Mathematics Teachers Annual Conference, Virtual Keynote Speaker, June 2023.
- San Diego STEAM Educators Conference, March 2023.
- Panamanian Foundation for the Promotion of Mathematics (FUNDAPROMAT), Invited Virtual Speaker, September 2022.
- National Museum of Mathematics, Invited Speaker for Family Fridays, December 2021.
- Matrix + Imaginary Conference Online, presentation of joint work with Alexey Ivchenko, September 2021.

Recent Community Outreach Events

- New York City Math Festival, New York, NY, July 2023
- Math Field Day, Chula Vista, CA, April 2023
- National Festival of Mathematics, Washington D.C., May 2019

Mathematical Art in Group Exhibitions

- IYASI 癒し / HEALING: WHAT DID YOU CREATE IN THE TIME OF CORONAVIRUS?! Japanese Friendship Garden, San Diego, CA, 2021
- Joint Mathematics Meetings Exhibition of Mathematical Art, Denver, CO, 2020. Joint work with Bjoern Muetzel.
- ICERM Illustrating Mathematics Exhibit at Brown University, Providence, Rhode Island, 2019. Joint work with Bjoern Muetzel.
- Joint Mathematics Meetings Exhibition of Mathematical Art, Baltimore, MD, 2019.

Teaching teachers

- Co-founder and instructor at the San Diego Math Teachers' Circle, 2011- 2020.
- Designed and taught workshop for Teachers, California State University, Long Beach. *Wallpaper Patterns: Analysis and Exploration*. 2010.
- Speaker at the Mathematics Diagnostic and Testing Project Conference on Geometric Reasoning, UCSD. *Geometry and the Imagination*. 2009.

Teaching Students

- Instructor, San Diego Math Circle, 2007 - present.
- Coach, Ocean Air Elementary School Math Club, 2015-2017.
- Math League Instructor, Pacific Trails Middle School, 2017- 2018.

Geometiles

- Inventor of Geometiles®, a brand of math manipulatives for learning and exploration.
- Recognized with several awards, including the Purdue University INSPIRE Research Institute for Pre-College Engineering.
- Partnerships with museums and nonprofits, including the National Museum of Mathematics, the Mathhappens Foundation, and the Panamanian Foundation for the Promotion of Mathematics.
- Geometiles are used by teachers, instructors, homeschooling families, and kids across the country and internationally.

Patents

- Mohanty, Y. “Set of Variably Assemblable Polygonal Tiles with Stencil Capability” 2015, U.S. Patent No. 9,070,300.
- Mohanty, Y. “Polygonal Tiles for Two-Dimensional and Three-Dimensional Symmetry Structures” 2016, U.S. Patent No. 949873.

Publications

- Mohanty, Yana and Muetzel, Bjoern. “It’s What Inside That Counts,” *Illustrating Mathematics*, edited by Diana Davis, American Mathematical Society, 2020, pp. 140-141.
- Mohanty, Yana. “Construction of a $3/4$ -Ideal Hyperbolic Tetrahedron out of Ideal Tetrahedra,” *Discrete and Computational Geometry* 32:117-128 (2004).
- Mohanty, Yana. “The Regge Symmetry is a Scissors Congruence in Hyperbolic Space,” *Algebraic and Geometric Topology* (3), 2003, pp. 1-31.

Teaching experience

2008-2009	Palomar College, San Marcos, CA. Taught pre-algebra and algebra.
2002-2008	UCSD, La Jolla, CA. Calculus, Differential Equations.
1999	Dartmouth College, Hanover, NH. Team taught “Geometry and the Imagination” with Peter Doyle.
1997-2002	Teaching Assistant in the Mathematics Department, UCSD, La Jolla, CA. Taught discussion sessions and computer labs for undergraduate mathematics courses.
1996	Chapman University, San Diego, CA Taught pre-calculus.

Research and Industry Experience

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| 2002-2003 | Postdoctoral fellow, Department of Mathematics, UCSD, La Jolla, CA. |
| 1994-1995 | Applications engineer, Loral Test and Information Systems, San Diego, CA. |
| 1991-1993 | Research Assistant, Department of Electrical and Computer Engineer, University of Massachusetts, Amherst. |
| 1989-1991 | Member of Technical Staff, Hughes Aircraft Company, El Segundo, CA. |