

# THOTSAPORN AEK THANATIPANONDA

999 Phutthamonthon Sai 4 Rd, Salaya, Phutthamonthon, Nakhon Pathom, Thailand 73170

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## EMPLOYMENT

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**Mahidol University International College**  
**Nakornpathom, Thailand**  
Lecturer Position, Science Division

*April 2014 - present*

**Research Institute for Symbolic Computation**  
**(RISC), Hagenberg, Austria**  
Postdoctoral Position

*December 2010 - March 2012*

**Dickinson College, Carlisle, PA**  
Visiting Assistant Professor, Department  
of Mathematics and Computer Science

*September 2008 - August 2009*

## EDUCATION

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**Rutgers University, Piscataway, NJ**  
Ph.D. in Mathematics  
Advisor: Doron Zeilberger

*September 2002 - October 2008*

**University of Wisconsin, Madison, WI**  
M.S. in Industrial Engineering  
Advisor: Leyuan Shi

*September 1999 - May 2002*

**Chulalongkorn University, Bangkok, Thailand**  
B.Sc. in Industrial Engineering  
Advisor: Sirichan Thongprasert

*June 1994 - March 1998*

## RESEARCH INTERESTS

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**Primary:** Experimental Mathematics, Enumerative Combinatorics

**Secondary:** Combinatorial Game Theory, Ramsey Theory, Partition Theory

## PUBLICATIONS

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- *A Multi-Computational Exploration of Some Games of Pure Chance* with Doron Zeilberger, submitted.
- *Rado Numbers of Regular Nonhomogeneous Equations*, submitted
- *A Quantitative Study on Average Number of Spins of Two-Player Dreidel*, submitted
- *Statistics of Domino Tilings on a Rectangular Board*, to appear in Conference Proceedings Issue of The Fibonacci Quarterly.

- *A Probabilistic Two-Pile Game*, with Ho Hon Leung, Journal of Integer Sequences, Volume 22, Issue 4, 2019.
- *A Curious Family of Binomial Determinants That Counts Rhombus Tilings of a Holey Hexagon*, with Christoph Koutschan, Journal of Combinatorial Theory, Series A, Volume 166, August 2019, Pages 352-381.
- *The Curious Bounds of Floor Function Sums*, with Elaine Wong, Journal of Integer Sequences, Volume 21, Issue 1, 2018.
- *On Identities Of Ruggles, Horadam, Howard, and Young*, with Curtis Cooper, Steven Miller, Peter Moses and Murat Sahin, Conference Proceedings Issue of The Fibonacci Quarterly, Volume 55(5), 2017
- *On the Minimum Number of Monochromatic Generalized Schur Triples*, with Elaine Wong, Electronic Journal of Combinatorics, Volume 24(2), 2017
- *Parts and Subword Patterns in Compositions*, with Brian Hopkins, Mark Shattuck, Andrew Sills and Hua Wang, Journal of Combinatorics and Number Theory (JCNT), Volume 9, Issue 1, 2017.
- *Determinants of Rising Powers of Second Order Linear Recurrence Entries by Means of the Desnanot-Jacobi Identity*, with Aram Tangboonduangjit, The Fibonacci Quarterly, Volume 54, November 2016.
- *Determinants Containing Powers of Generalized Fibonacci Numbers*, with Aram Tangboonduangjit, Journal of Integer Sequences, Volume 19, Issue 7, 2016.
- *Rook Endgame Problems in  $m$  by  $n$  Chess*, Advances in Applied Mathematics, Volume 61, Page 19-24 (October 2014).
- *Beyond Zudilins Conjectured  $q$ -analog of Schmidts problem*, Journal of Difference Equations and Applications, Volume 20(9), 2014, Page 1344-1349.
- *A Simple Proof of Schmidts Conjecture*, Journal of Difference Equations and Applications 20(2014), Page 413-415.
- *Advanced Computer Algebra for Determinants*, with Christoph Koutschan, Annals of Combinatorics: Volume 17, Issue 3(2013), Page 509-523.
- *Harmonic interpolation based on Radon projections along the sides of regular polygons*, DK Computational Mathematics. Technical report no.2011-12, Johannes Kepler University Linz, Austria, 2011.
- *Further Hopping with Toads and Frogs*, Electronic Journal of Combinatorics, R14 of Volume 18(1), 2011.
- *On the Monochromatic Schur Triples Type Problem*, Electronic Journal of Combinatorics, R14 of Volume 16(1), 2009.
- *A Symbolic Finite-State Approach For Automated Proving of Theorems in Combinatorial Game Theory*, with Doron Zeilberger, Journal of Difference Equations and Applications, 15(2009), 111-118.
- *How to beat Capablanca*, Advances in Applied Mathematics, Volume 40, Number 2, February 2008, 226-240.
- *Permutation Statistics*, Mathematics Magazine, April 2004, 136-140.

## TEACHINGS

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- Acturial Mathematics 2: T1 2018-19

- Undergrad. Seminar: T2 2017-18
- Probability: T1 2017-18
- Advanced Calculus: T2 2016-17
- Abstract Algebra: T2 2015-16
- Calculus III: T1 and T2 2015-16, T1 2016-17, T1-T2 2019-20
- Complex Analysis: T1 2014-15
- Mathematical Software: T3 2013-14, T1 2016-17
- Number Theory: Fall 2008
- Elementary Statistics: Fall 2008, Spring 2009, Year 2014, 2015, 2016, 2017, 2018, 2019
- Graph Theory: Summer 2008
- Numerical Analysis: Summer 2007, T1 2016-17, T2 2017-18
- Linear Optimization: Summer 2006
- Calculus II: Summer 2004, Spring 2009 (Instructor)
- Differential Equation: Fall 2006, Spring 2008 (Teaching Assistant), T1 2018-19 (Instructor)
- Pre Calculus, Calculus I,III: Fall 2003, Spring 2004, Fall 2004, Spring 2005, Fall 2005, Spring 2006, Spring 2007, Fall 2007 (Teaching Assistant)

## INVITED TALKS

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- *Rado Numbers of Regular Non-homogeneous Equations*, 1st Workshop on Graph Theory, Combinatorics and Application (GTCA 2019), United Arab Emirates University(UAEU), Al Ain, UAE, October 9-10, 2019
- *On Average Length of the Games*, CARMA Workshop on Computer Aided Proof, University of Newcastle, Australia, June 2019
- *A Probabilistic Two-Pile Game*, CARMA Workshop on Computer Aided Proof, University of Newcastle, Australia, June 2019
- *Moment Method on Ramsey Numbers*, "Ola Bratteli" Mathematical Physics Seminar and Mathematics in Thailand Colloquium, Thammasat University, Thailand, April 2018
- *Time for the New Ansatz (?)*, 23rd Conference on Applications of Computer Algebra , Session: Algorithmic Combinatorics, Jerusalem, Israel, July 2017
- *Roles of Computer in Mathematics*, Thailand Science Fair, Thailand, December 2016
- *Finite State Method for Combinatorial Games*, Colloquia, Queens College, March 2008
- *Finite State Method for Combinatorial Games*, Workshop on Combinatorial Game Theory, BIRS Alberta, Canada, January 2008
- *Computer-Generated Conjectures(!) and Proofs(!) in Combinatorial Game Theory (II)*, AMS Special Session on Applications of Computer Algebra in Enumerative and Algebraic Combinatorics, Joint Mathematics Meetings San Diego, January 2008

## SEMINAR TALKS

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- *A Quantitative Study on Average Number of Spins of Two-Player Dreidel*, Math. Seminar, Mahidol University International College (MUIC), Thailand, September 2019

- *It is Impossible to Solve Chomp(?)*, Math. Seminar, MUIC, Thailand, March 2019
- *The On-Line Encyclopedia of Integer Sequences (OEIS)*, Math. Seminar, MUIC, Thailand, September 2018
- *Statistics of Domino Tilings on a Rectangular Board*, The Eighteenth International Conference on Fibonacci Numbers and Their Applications, Dalhousie University, Halifax, Canada, July 2018
- *Boolean Function and Covering Systems*, Math. Seminar, MUIC, Thailand, June 2018
- *The Curious Bounds of Floor Function Sums*, Joint Mathematics Meetings 2018, San Diego, USA, January 2018
- *The Wholesale Combinatorialist*, Math. Seminar, MUIC, Thailand, October 2017
- *Symmetric Functions and Identities from Their Character Tables*, Math. Seminar, MUIC, Thailand, May 2017
- *Asymptotic Analysis of Partition Function  $p(n)$* , Math. Seminar, MUIC, Thailand, February 2017
- *On the Minimum Number of Monochromatic Generalized Schur Triples*, Joint Mathematics Meetings 2017, Atlanta, USA, January 2017
- *On Arithmetic Combinatorics*, Math. Seminar, MUIC, Thailand, October 2016
- *Generalized Fibonacci Numbers with Matrix Method*, The Seventeenth International Conference on Fibonacci Numbers and Their Applications, Universite de Caen-Normandie, Caen, France, June/July 2016
- *Apery Miracle*, Math. Seminar, MUIC, Thailand, May 2016
- *Bijjective Proof*, Math. Seminar, MUIC, Thailand, January 2016
- *On Central Limit Theorem and Moment Calculus*, Math. Seminar, MUIC, Thailand, November 2015
- *Probabilistic Method*, Math. Seminar, MUIC, Thailand, June 2015
- *Schmidts Conjecture*, Combinatorics Seminar, RISC, Austria, March 2012
- *Evaluating a Determinant*, Combinatorics Seminar, RISC, Austria, June 2011
- *A Symbolic Finite State Approach to Automated Theorem Proving*, Combinatorics Seminar, RISC, Austria, December 2010
- *Math And Chess*, Farewell Talk, Dickinson College, April 2009
- *When Harry met Sally ...*, Graduate Student Combinatorics Seminar, Rutgers University, October 2007
- *Some fun with the minimum number of same color Schur triples on  $[1, n]$* , Graduate Student Combinatorics Seminar, Rutgers University, October 2007
- *Experimental Math and Ramsey Theory*, Introduction to Mathematics at Rutgers (IMR), Rutgers University, September 2007
- *Dancing with Toads and Frogs*, Experimental Mathematics seminar, Rutgers University, January 2007
- *On playing games*, Graduate Pizza seminar, Rutgers University, December 2006
- *Ramsey Theory*, Graduate Pizza seminar, Rutgers University, January 2006

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## AWARDS

- Deans Award for Excellence in Research from the Graduate School, Rutgers University, 2008
- TA Teaching Excellence Awards, Fall 2006