

Curriculum Vitae

Wai Yan Pong

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Research Interests

Number Theory, Differential Algebra and Model Theory.

Education

- University of Illinois at Chicago (UIC), Ph.D. Mathematics, May 1999.
Thesis Adviser: David E. Marker.
- University of Illinois at Chicago, M.Sc., Fall 1997.
- The Chinese University of Hong Kong, B.Sc.
(Major: Mathematics (1st Honor), Minor: Computer Science), 1993.

Publications

1. Densities of Length Spectral Partitions of Natural Numbers (accepted), Online Journal of Analytic Combinatorics (Dec 2021).
2. Addendum to "Applications of differential algebra to algebraic independence of arithmetic functions" (Acta Arith. 172 (2016), 149–173). Acta Arith. 196 (2020), no. 3, 325–327.
3. Refinement of metrics: Erdős number, a case study. (with Kayla Lock and Alex Wittmond), PUMP J. Undergrad. Res. 2 (2019), 118–130.

4. Applications of differential algebra to algebraic independence of arithmetic functions. *Acta Arith.* 172 (2016), no. 2, 149–173.
5. Diophantine Equations of Matching Games II (with Roelof J. Stroeker), *Acta Arithmetica* 151 (2012), no. 3, pages 311–323.
6. Diophantine Equations of Matching Games I (with Chun Yin Hui), *INTEGERS*, Volume 12, issue 2, (2012), pages 179–195.
7. Quantifier Elimination Locally Finite Graphs (with Shawn Hedman) *Mathematical Logic Quarterly* Volume 57, Issue 2, pages 180–185, April 2011.
8. Locally Finite Homogeneous Graphs (with Shawn Hedman), *Combinatorica*, July 2010, Volume 30, Number 4, Pages 419–434
9. Length Spectra of Natural Numbers, *International Journal of Number Theory*, Volume 5, Issue 6, 2009, pp.1089–1102.
10. Sums of Consecutive Integers, *the College Mathematics Journal*, Vol. 38, NO. 2, March 2007, p.119–123.
11. Rank Inequalities in the Theory of Differentially Closed Fields. in *Logic Colloquium, 2003*, *Lecture Notes in Logic*, 24, Association for Symbolic Logic, 2005.
12. Orderings of monomial ideals (with Matthias Aschenbrenner), *Fundamenta Mathematicae* 181 (2004).
13. On Lascar Rank and Morley Rank of Definable Groups in Differentially Closed Fields. (with Anand Pillay) *Journal of Symbolic Logic*. Volume 67. Number 3. Sept. 2002.
14. On a result of Rosenlicht, *Communications in Algebra*, Vol. 30, issue 12, 2002, p.5933-5939.
15. Chains of Differential Subvarieties in an Algebraic Variety, *Journal of Algebra* 248, 755-764, 2002.
16. Some Applications of Ordinal Dimensions to the Theory of Differentially Closed Fields. *Journal of Symbolic Logic*. (2000), 65, no. 1, pp.347-356.
17. Complete Sets in Differentially Closed Fields. *Journal of Algebra* 224, 454-466 (2000).
18. Ordinal Dimensions and Completeness in Differentially Closed Field. Thesis. May 1999.

Fellowships/Support

- Visiting Fellow, National University of Singapore, 2007–2008.
- Visiting Scholar, The Chinese University of Hong Kong 2004-2005.
- University Fellowship (UIC): 1996-97, 1997-98.
- Sloan Dissertation Fellowship: 1998-99.
- Partially supported by the NSF Grant DMS-0070179 from Anand Pillay as a postdoctoral associate. 2000-02.

Invited Talks

- Algebra/ Number Theory/ Combinatorics Seminar, Claremont Center for the Mathematical Sciences, Mar 2019.
- Math Club Talk, CSU Los Angeles, Nov 2018.
- Math Colloquium, CSU Long Beach, Apr 2016.
- Number Theory seminar, University of New Mexico, Feb 2016.
- Kolchin Seminar, CCNY, Mar 2015.
- Algebra/ Number Theory/ Combinatorics Seminar, Claremont Center for the Mathematical Sciences, Feb 2015.
- Math Colloquium, University of New Mexico, Nov 2014.
- Math Colloquium, Cal Poly Pomona, Nov 2013
- Algebra/ Number Theory/ Combinatorics Seminar, Claremont Center for the Mathematical Sciences, April 2011.
- Logic Colloquium, UCLA, October 2009.
- Mathematics Colloquium, CSULB, April 2009.
- Model Theory Seminar, UC Berkeley, April 2009.
- Logic Colloquium, Department of Mathematics, National University of Singapore, March 2008.
- Special Session in Differential Algebra, AMS sectional meeting, April 2007.
- Mathematics Colloquium, San Francisco State University, March 2007.

- Mathematics Colloquium, California State University, Channel Islands, February 2007.
- Graduate Students Seminar, University of Illinois at Chicago, November 2006.
- Mathematics Colloquium, University of Nevada, Las Vegas, March 2006.
- Mathematics Colloquium, California State University, Long Beach, March 2006.
- The Second Annual Conference on Computation and Logic (ACCL 05), Kunming, China, 2005.
- Departmental Seminar, the Chinese University of Hong Kong, Jan 2004.
- Mathematics Colloquium, El Camino College, Nov 2003.
- Logic Colloquium 2003, Helsinki, Finland, Aug 2003.
- UCLA Logic Colloquium, Nov 2002.
- Special Session in Model theory, AMS Annual Meeting 2001.
- Special Session in logic, AMS Annual Meeting 1999.
- Mid-West Model Theory, Notre Dame Nov. 1998.

Employment History

1. Professor California State University Dominguez-Hills, 2012–current (Associate Professor 2008–2011, Assistant Professor 2002–2008)
2. Visiting Fellow, Fall 2007–Spring 2008. National University of Singapore.
3. Visiting Scholar, Fall 2004–Spring 2005. The Chinese University of Hong Kong.
4. J.L.Doob Research Assistant Professor
University of Illinois at Urbana-Champaign, 1999–2002.
5. Teaching Assistant University of Illinois at Chicago, 1993–1999.

Course Taught

Abstract Algebra, pre-Calculus, Calculus I, II and III, Calculus for life-sciences students, Discrete Mathematics, Statistics (elementary and Calculus-based), Finite Automata, Geometry for middle school teachers, History of Mathematics, Mathematical Analysis, Mathematical Logic, Number Theory, Linear Algebra, Linear Programming, Model Theory, Student seminar.

Other Professional Contributions

- A referee for several journals and conference proceedings: the PUMP Journal of Undergraduate Research, Turkish journal of mathematics, Communications in Algebra, AIP (American Institute of Physics) Conference Proceedings, Central European Journal of Mathematics, Open Mathematics.
- A reviewer for Zentralblatt (since 2011)
- A reviewer for Mathematical Reviews (since 2002).
- A referee for an International Research Fellowship proposal for NSF (2009).
- External reviewer for the mathematics program for CSU Channel Islands (2008).
- Contributor of *10000 Selected Problems in Sciences—Mathematics*, published by Science Press 2009, ISBN 978-7-03-024267-9/O.3500.
- A referee for the journal *Science in China* (2008).

Computer Skills

- Python
- SAGE/CoCalc (Computer Algebra System), Docker, Mysql, WebWork.
- System administrator for departmental Linux servers