Hung Cong Tran

Curriculum vitae

▬▬▬ Employment history

2019–Present	**Post-doctoral faculty**, *The University of Oklahoma*.
2016–2019	**Assistant Professor (Limited Term)**, *The University of Georgia*.
Spring 2016	**Mathematics Lecturer**, *University of Wisconsin*, Milwaukee.
2010–2015	**Graduate Teaching Assistant**, *University of Wisconsin*, Milwaukee.

▬▬▬ Education

2010–2015	**Ph.D. in Mathematics (Dec. 2015)**, University of Wisconsin, Milwaukee.
2005–2009	**B.S. in Mathematics-Computer Science Education**, *Da Nang University of Education*, Viet Nam, Graduated with High Honors.

▬▬▬ Research Interests

My primary research areas are in geometric group theory and low-dimensional topology. In particular, I am interested in quasi-isometry classification, commensurability classification, and geometric relationship between a group and its subgroups. Most of my research focuses on CAT(0) spaces, relatively hyperbolic groups, right-angled Artin groups, right-angled Coxeter groups, and groups acting on manifolds.

▬▬▬ Teaching Experience

2019–Present	**Post-doctoral faculty**, *The University of Oklahoma*.
	MATH-3113: Introduction to Ordinary Differential Equations (Spring 2020)
	MATH-2433: Calculus and Analytic Geometry III (Fall 2019)
2016–2019	**Assistant Professor (Limited Term)**, *The University of Georgia*.
	MATH-1113: Precalculus (Fall 2016, Spring 2018)
	MATH-2250: Calculus I for Science and Engineering (Fall 2017, Fall 2018)
	MATH-2270: Calculus III for Science and Engineering (Spring 2017)
	MATH-2500: Accelerated Calculus III for Engineering Students (Spring 2019)
Spring 2016	**Mathematics lecturer**, *University of Wisconsin*, Milwaukee.
	MATH-211: Survey in Calculus and Analytic Geometry (Spring 2016, online classes)

2010–2015 **Graduate Teaching Assistant**, *University of Wisconsin*, Milwaukee.
MATH-105 (Sole Instructor): Intermediate Algebra (Fall 2011, Spring 2012, Spring 2013, Fall 2014)
MATH-211 (Sole Instructor): Survey in Calculus and Analytic Geometry (Fall 2015 (online class))
MATH-232 (Sole Instructor): Calculus and Analytic Geometry 2 (Summer 2011, Fall 2013)
MATH-233 (Sole Instructor): Calculus and Analytic Geometry 3 (Fall 2012)
MATH-234 (Sole Instructor): Linear Algebra and Differential Equations (Summer 2012, Summer 2013)
MATH-105 (Teaching Assistant): Intermediate Algebra (Fall 2010)
MATH-211 (Teaching Assistant): Survey in Calculus and Analytic Geometry (Spring 2011)

Publications

Accepted papers
- On the coarse geometry of certain right-angled Coxeter groups, (with Hoang Thanh Nguyen). *Algebr. Geom. Topol.*, 19(6):3075–3118, 2019.
- On the relative hyperbolicity and manifold structure of certain right-angled Coxeter groups, (with Matthew Haulmark and Hoang Thanh Nguyen). To appear in *Internat. J. Algebra Comput.*.
- On strongly quasiconvex subgroups. *Geometry and Topology*, 23(3):1173–1235, 2019.
- Surface group amalgams that (don't) act on 3-manifolds, (with Christopher Hruska and Emily Stark). To appear in *American Journal of Mathematics*.
- Divergence spectra and Morse boundaries of relatively hyperbolic groups. *Geometriae Dedicata*, 194:99–129, 2018.
- Geometric embedding properties of Bestvina-Brady subgroups. *Algebraic and Geometric Topology*, 17(4):2499–2510, 2017.
- Divergence of Morse geodesics. *Geometriae Dedicata*, 180:385–397, 2016.
- Relative divergence of finitely generated groups. *Algebraic and Geometric Topology*, 15(3):1717–1769, 2015.
- Relations between various boundaries of relatively hyperbolic groups. *Internat. J. Algebra Comput.*, 23(7):1551–1572, 2013.

Preprints
- Divergence of finitely presented groups, (with Noel Brady). *Submitted*, arXiv:2002.03653.
- Quasiconvexity in 3-manifold groups, (with Hoang Thanh Nguyen and Wenyuan Yang). *Submitted*, arXiv:1911.07807.
- The local-to-global property for Morse quasi-geodesics, (with Jacob Russell and Davide Spriano). *Submitted*, arXiv:1908.11292.
- Convexity in hierarchically hyperbolic spaces, (with Jacob Russell and Davide Spriano). *Submitted*, arXiv:1809.09303.

- Malnormality and join-free subgroups in right-angled Coxeter groups. *Submitted*, arXiv:1703.09032.
- On distortion of normal subgroups. *Submitted*, arXiv:1611.07453.

In preparation
- Jordan cycling and virtually Kleinian 3-manifold groups, (with Christopher Hruska and Emily Stark). *In preparation*.

Invited Talks

- "Strong quasiconvexity and almost malnormality" Seminar in Korea Institute for Advanced Study, January 2020.
- "Strong quasiconvexity and almost malnormality" Fall 2019 Redbud conference, Oklahoma State University, Stillwater, Oklahoma, November 2019.
- "The local-to-global property for Morse quasi-geodesics" Seminar in Louisiana State University, Baton Rouge, Louisiana, October 2019.
- "Quasiconvex subgroups" Seminar in The University of Texas at Dallas, Dallas, TX, October 2019.
- "The local-to-global property for Morse quasi-geodesics" Seminar in Korea Institute for Advanced Study, July 2019.
- "Quasiconvex subgroups" Seminar in Korea Institute for Advanced Study, July 2019.
- "On the relative hyperbolicity and manifold structure of certain right-angled Coxeter groups" Seminar in University at Buffalo, Buffalo, NY, May 2019.
- "On the coarse geometry of certain right-angled Coxeter groups" 53rd Spring Topology and Dynamical Systems Conference, University of Alabama at Birmingham, Birmingham, Alabama, March 2019.
- "On the coarse geometry of certain right-angled Coxeter groups" Seminar in Columbia University, New York City, NY, September 2018.
- "On strongly quasiconvex subgroups" Seminar in Cornell University, Ithaca, NY, May 2018.
- "On strongly quasiconvex subgroups" AMS Spring Southeastern Sectional Meeting, Vanderbilt University, Nashville, TN, April 2018.
- "On strongly quasiconvex subgroups" 52nd Spring Topology and Dynamical Systems Conference, Auburn University, March 2018.
- "On the coarse geometry of right-angled Coxeter groups" Colloquium in Bowling Green State University, Bowling Green, OH, February 2018.
- "On strongly quasiconvex subgroups" Seminar in Vanderbilt University, Nashville, TN, December 2017.
- "On boundaries of relatively hyperbolic right-angled Coxeter groups" Seminar in Georgia Tech, Atlanta, GA, September 2017.

- o "Geometric embedding properties of Bestvina-Brady subgroups" 51th Spring Topology and Dynamics Conference 2017, New Jersey City University, March 08–11, 2017.
- o "Geometric embedding properties of Bestvina-Brady subgroups" Seminar in Columbia University, New York City, NY, September 2016.
- o "Relative divergence, subgroup distortion, and geodesic divergence" Seminar in Tufts University, Medford, MA, September 2015.
- o "Relative divergence, subgroup distortion, and geodesic divergence" Seminar in University of Wisconsin-Madison, WI, September 2015.
- o "Divergence of Morse geodesics" 49th Spring Topology and Dynamics Conference 2015, Bowling Green State University, May 14–16, 2015.
- o "Relative divergence of finitely generated groups" Topological Methods in Group Theory, Ohio State University, Columbus, OH, June 2014.
- o "Relative divergence of finitely generated groups" Workshop in Geometric Topology, University of Wisconsin-Milwaukee, WI, June 2014.
- o "Relations between various boundaries of relatively hyperbolic groups" Workshop in Geometric Topology, Calvin College, Grand Rapids, MI, June 2013.

Prizes and Scholarships

- o The University of Sydney Mathematical Research Institute (SMRI) International Visitor Program (2019). Award amount up to $8500.
- o AMS-Simons Travel Grant (Travel funding for early-career mathematician for research-related travel) (2019). Award amount up to $4000.
- o Research Membership for Geometric Group Theory program from Mathematical Sciences Research Institute, Berkeley, CA, USA (2016).
- o Graduate Teaching Assistantship at University of Wisconsin at Milwaukee (2010-2014).
- o Chancellor's Fellowship Award at University of Wisconsin at Milwaukee (2010-2014).
- o Graduate Research Assistantship at University of Wisconsin at Milwaukee (Spring 2014).
- o Morris and Miriam Marden Awards in Mathematics given by University of Wisconsin at Milwaukee (2013, 2015) (The Graduate Award is given for a mathematical paper of high quality with respect to both exposition and mathematical content.)

- Mark Lawrence Teply Award given by University of Wisconsin at Milwaukee (2015). (The Graduate Award is given for students who show remarkable potential in their research fields.)
- First prize in Analysis and Third prize in Algebra, National Mathematics Olympic of Vietnam for University Students (2007).
- Bronze Medal, Mathematics Olympic of South Vietnam for High School Students (2004).

Professional activities

- Referee for Journal of the London Mathematical Society.
- Review for Mathematical Reviews.

Additional Skills

Languages Vietnamese (native), English (fluent), French (reading knowledge).

References

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