

## Emine YILDIRIM

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311 Westdale Ave, Apt 9  
Kingston, ON, K7L 4S6  
emineyyildirim@gmail.com

### EDUCATION

*PhD. in Mathematics,*  
Université du Québec à Montréal, Canada. August 2015–May 2018  
University of New Brunswick, Canada. January 2014–August 2015  
Advisor : Hugh Thomas

*MSc. in Mathematics,* February 2010–June 2011  
Abant Izzet Baysal University, Turkey.  
Advisor : Tahire Ozen Ozturk  
Master Thesis : Studies on Some Complexes

*BSc. in Mathematics,* September 2006–January 2010  
Abant Izzet Baysal University, Turkey.  
Graduation Thesis I : Weierstrass Approximation Theorem  
Graduation Thesis II : Finite State Machines

### WORK EXPERIENCE

*Postdoctoral Fellow* July 2018–present  
Queen's University, Canada.

*Teaching Asistant* January 2014–August 2015  
University of New Brunswick, Canada.

*Lecturer* August 2012–December 2013  
Istanbul Arel University, Turkey.

### PAPERS

V. Bazier-Matte, G. Douville, A. Garver, R. Patrias, H. Thomas, E. Yıldırım, *Leading Terms of  $SL_3$  Web Invariants*, (to appear in) International Mathematics Research Notices.

V. Bazier-Matte, G. Douville, K. Mousavand, H. Thomas, E. Yıldırım, *ABHY Associahedra and Newton Polytopes of  $F$ -polynomials for finite type cluster algebras*, arXiv:1808.09986.

E. Yıldırım, *Coxeter transformation on cominusculer posets*. Algebra and Representation Theory, Vol. 22 (2019), No. 3, pp. 699-722.

T. Brüstle, G. Douville, K. Mousavand, H. Thomas, and E. Yıldırım, *On the combinatorics of gentle algebras*, (to appear in) Canadian Journal of Mathematics.

T. Ozen and E. Yıldırım,  *$\mathcal{X}$ -Injective and  $\mathcal{X}$ -Projective Complexes*. Bull. Iranian Math. Soc. Vol. 42 (2016), No. 5, pp. 1221-1235.

## PRESENTATIONS

- *A slight extension of discrete cluster categories*, Cluster Algebras and Quiver Representations, Centre de Recherches Mathématiques (CRM), August 2019.
- *Cluster categories for an infinite rank cluster algebra*, Summer Day of Representation Theory of Algebras, Université de Sherbrooke-Bishop's University, QC, July 2019.
- *The bounded derived category for cominuscul posets*, Maurice Auslander Distinguished Lectures and International Conference, Woods Hole, MA, April 2019.
- *The Web Basis and Preprojective Algebras*, American Mathematical Society Sectional Meeting, Hartford, CT, April 2019.
- *Associahedra and Newton Polytopes of F-Polynomials*, Cluster structures in geometry, physics, combinatorics and representation theory, Jerusalem, December 2018.
- *The bounded derived category for cominuscul posets*, Algebra seminar, Queen's University, Kingston, ON, September 2018.
- *Generalized Associahedra and Newton polytopes of F-polynomials*, Algebra seminar, Carleton University, Ottawa, ON, September 2018.
- *Associahedra via quiver representations*, Canadian Mathematical Society Summer Meeting, Fredericton, NB, June 2018.
- *The periodicity of the Coxeter transformation*, The XXI<sup>e</sup> Colloque panquébécois des étudiants de l'Institut des Sciences mathématiques (ISM), Université de Sherbrooke, QC, May 2018.
- *The Coxeter transformation on cominuscul posets*, Séminaire de combinatoire, Université du Québec à Montréal, LaCIM, QC, February 2018.
- *The Coxeter transformation on cominuscul posets*, Department seminar, Mimar Sinan University, Istanbul, December 2017.
- *The Coxeter transformation on grid posets*, Department seminar, Istanbul Technical University, Istanbul, December 2017.
- *Cluster Monomials in Web Basis*, Algebra seminar, University of Sherbrooke, QC, November 2017.
- *Cluster Monomials in Web Basis*, Cluster algebras seminar, University of Connecticut, CT, November 2017.
- *Coxeter transformation on cominuscul posets*, Cluster algebras seminar, University of Connecticut, CT, October 2017.
- *Coxeter transformation on cominuscul posets*, Combinatoric seminar, University of Minnesota, MN, September 2017.
- *Auslander-Reiten translation on cominuscul posets*, Advances in Representation Theory of Algebras VI: Geometry and Homology (ARTA), Luminy, September 2017.
- *Periodic behavior of Auslander-Reiten translation*, The Mathematical Congress of the Americas (MCA), Montreal, QC, July 2017.
- *On the combinatorics of gentle algebras*, XXVIIIth Meeting on Representation Theory of Algebras, Sherbrooke, QC, September 2016.
- *Coxeter transformation of the poset of order ideals in a grid*, International Conference on Representations of Algebras, Syracuse, NY August 2016.
- *Cluster Algebras*, graduate seminar, University of New Brunswick, NB, April 2015.

- *Two dimensional Yetter-Drinfeld modules over  $U_q(sl_2)$  are trivial*, Hopf Algebras in (Co)Action workshop, NB, June 2014.
- *Monomial ideals of path algebras*, research seminar, University of New Brunswick, NB, March 2014.

## CONFERENCES ATTENDED

- Quiver Varieties and Representation Theory, Centre de Recherches Mathématiques (CRM), Montreal, QC, August 2019.
- Maurice Auslander Distinguished Lectures and International Conference, Woods Hole, Massachusetts, MA, April 2019.
- American Mathematical Society Sectional Meeting, Hartford, CT, April 2019.
- Cluster structures in geometry, physics, combinatorics and representation theory, Jerusalem, December 2018.
- The 28th Annual Route 81 Conference on Commutative Algebra and Algebraic Geometry, Syracuse, September 2018.
- The XXXth Meeting on Representation Theory of Algebras, Sherbrooke, QC, September 2018.
- Canadian Mathematical Society Summer Meeting, Fredericton, NB, June 2018.
- The  $XIX^e$  Colloque panquébécois des étudiants de l'ISM, Université de Sherbrooke, QC, May 2018.
- Cluster Algebras: Twenty Years On, Centre International de Rencontres Mathématiques (CIRM), Luminy, 2018.
- Combinatorial Algebra meets Algebraic Combinatorics, Fifteenth Annual Meeting, Hamilton, ON, January 2018.
- The XXIXth Meeting on Representation Theory of Algebras, Sherbrooke, QC, September 2017.
- Advances in Representation Theory of Algebras VI: Geometry and Homology (ARTA), CIRM, Luminy, 2017.
- The Mathematical Congress of the Americas (MCA), Montreal, QC, July 2017.
- Maurice Auslander Distinguished Lectures and International Conference, Woods Hole, MA, April 2017.
- Combinatorial Algebra meets Algebraic Combinatorics, Fourteenth Annual Meeting, Montreal, QC, January 2017.
- The XXVIIIth Meeting on Representation Theory of Algebras, Sherbrooke, QC, September 2016.
- International Conference on Representations of Algebras, Syracuse, NY, August 2016.
- The  $XIX^e$  Colloque panquébécois des étudiants de l'ISM, QC, May 2016.
- Maurice Auslander Distinguished Lectures and International Conference, Woods Hole, MA, April 2016.
- Canadian Mathematical Society Winter Meeting, Montreal, QC, December 2015.
- The XXVIIth Meeting on Representation Theory of Algebras, Sherbrooke, QC, September 2015.
- Maurice Auslander Distinguished Lectures and International Conference, Woods Hole, MA, April 2015.
- Fall Eastern Sectional Meeting Dalhousie University, Halifax, NS, October 2014.

## WORKSHOPS ATTENDED

- Connections for Women: Group Representation Theory and Applications, Mathematical Sciences Research Institute, Berkeley, CA February 2018.
- School and Workshop : Algebraic and Geometric Combinatorics of Reflection Groups, Montreal, QC, June 2017.
- Sage Days 86, UQAM, Montreal, QC, April 2017.
- Workshop on Representations of Algebras, Syracuse, NY, August, 2016.
- Positive Grassmannians, CRM, Montreal, QC, July 2015.
- Cluster algebras, Poisson Structure, Networks and Integrable Systems, CRM, Montreal, QC, July 2015.
- Hopf Algebras in (Co)Action, Fredericton, NB, June 2014.
- Noncommutative Geometry and Quantum Groups, Bahcesehir University, Istanbul, September 2014.
- Path Algebras and Homology, Bahcesehir University, Istanbul, January 2013.

## AWARDS

- Queen's University Post-Doctoral Travel Award, 2018.
- Coleman Postdoctoral Fellowship at Queen's University, 2018-2019.
- ISM Scholarships for Outstanding PhD Candidates, 2018.
- ISM Graduate Scholarships at UQAM. 2016, 2017, 2018.
- Tuition Exemption Scholarships at UQAM. 2015, 2016, 2017, 2018.
- President's Doctoral Tuition Award at UNB. 2014.
- International Differential Scholarship at UNB. 2014.
- Graduate Scholarship from Prime Ministerial Office in Turkey. 2010-2011.
- Undergraduate Scholarship from Prime Ministerial Office in Turkey. 2006-2010.

## TEACHING EXPERIENCE

*Queen's University, Kingston, Canada:* I taught *Vector Calculus* in the Fall semester 2018. The class sizes were about 150 students and I was responsible for every aspect of my class. I taught *Rings and Fields* in the Winter semester 2019 to 55 students. I am teaching *Vector Calculus* again in the Fall semester 2019, and I will teach *Linear Algebra* for the Winter semester 2020.

*University of New Brunswick, Fredericton, Canada:* From January 2014 to August 2015, I worked as a teaching assistant for introductory calculus classes. I was responsible for preparing exercises and grading. I conducted problem solving sessions two hours every week. In addition, I worked as a tutor at the Math Help Center helping students in their homeworks.

*Arel University, Istanbul, Turkey:* From 2012 to 2014, I was a full time lecturer. I taught introductory calculus classes in English to first and second year engineering students. I was responsible from preparing and giving lectures, assigning and grading homeworks, preparing and grading exams.

## SKILLS

*Languages:* Turkish (native), English (fluent), French (intermediate).

*Software:* MATLAB, L<sup>A</sup>T<sub>E</sub>X, GAP, PYTHON, JAVA, SINGULAR, MATHEMATICA, SAGE.

*Art:* Painting, Photography.