

Sajad Sadeghi

Curriculum Vitae

Contact Information

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Summary

- Ph.D. in Mathematics with over 10 years of teaching experience.
- Demonstrated excellence in teaching, including online instruction and a passion for fostering student learning.
- Teaching experience in *Calculus, Linear Algebra, Differential Equations, and Differential Geometry*.
- Experience in curriculum development and academic advising.
- Committed to creating an inclusive and engaging learning environment.

Education

Ph.D. in Mathematics, Western University, London, Canada 2012–2016

- Specialization: Non-commutative Geometry
- Supervisor: Prof. Masoud Khalkhali
- Thesis: *On Logarithmic Sobolev Inequality and a Scalar Curvature Formula for Non-commutative Tori*

M.Sc. in Mathematics, Tarbiat Modares University, Tehran, Iran 2007–2010

- Specialization: Mathematical Analysis
- Supervisor: Prof. Alireza Medghalchi
- Thesis: *Hecke C^* -Algebras and Schlichting Completion Theorem*

B.Sc. in Mathematics, Shahid Beheshti University, Tehran, Iran 2002–2007

Teaching Experience

Lecturer, Department of Physics and Astronomy, Western University, London, Canada Winter 2025

- Taught Linear Algebra with Numerical Analysis for Engineering.

Lecturer, Department of Computer Science, Western University, London, Canada Fall 2024

- Taught Applied Logic for Computer Science.

Lecturer, Department of Mathematics, Western University, London, Canada Summer 2024

- Taught Methods of Finite Mathematics to diverse groups of science students.
- Adapted course content and designed a new website for the transition from Sakai to Brightspace LMS.
- Customized online quizzes to enhance student engagement and learning.

Lecturer, Department of Mathematics, Western University, London, Canada Winter 2024

- Taught Matrix Algebra to diverse groups of science students.

Lecturer, Department of Mathematics, Western University, London, Canada

Fall 2022

- Taught Linear Algebra to diverse groups of science students.
- Collaborated within a team of instructors to ensure consistent course delivery.
- Developed lab session materials for graduate teaching assistants.
 - ◊ Challenge: Identified a need for enhanced lab session materials to support graduate teaching assistants.
 - ◊ Action: Collaborated with colleagues to design and develop comprehensive materials, incorporating interactive elements and tailored content.
 - ◊ Result: The new materials resulted in improved clarity, engagement, and effectiveness in supporting teaching assistants and enhancing overall student learning outcomes.

Assistant Professor, Department of Mathematics, Iran University of Science and Technology, Tehran, Iran

2017-2021

- Taught undergraduate mathematics courses including Calculus, Linear Algebra, Differential Equations, Foundations of Geometry and Differential Geometry.
- Revamped the curriculum for the first-year calculus course.
 - ◊ Challenge: Identified a significant gap in the preparedness of freshmen for the first-year calculus course, stemming from revisions in high school mathematics textbooks.
 - ◊ Action: Collaborated with colleagues to conduct a thorough analysis, pinpointing the specific topics that were omitted from the updated high school curriculum.
 - ◊ Result: Designed and implemented a tailored first-year Calculus curriculum to address missing foundational concepts, significantly improving the transition of students from high school to university for a smoother learning experience.
- Coordinated a Differential Equation course for over 900 students at the onset of the Covid-19 pandemic.
 - ◊ Challenge: Navigated the challenges posed by the onset of the Covid-19 pandemic coinciding with the start of the course, where both students and instructors were unprepared for online classrooms.
 - ◊ Action: Swiftly adapted by familiarizing myself with the university's online platform and conducted virtual training sessions to equip instructors with the necessary skills.
 - ◊ Result: These training sessions played a pivotal role in facilitating a smooth transition to online teaching, ensuring effective course delivery despite the unexpected shift to virtual instruction.
- Advised Mathematics students for a duration of 4 years.
- Coached a university team selected for a mathematics student competition, providing instruction, training, and accompanying the team in two competitions. Achieved notable success with the team earning a bronze medal and a silver medal.

Lecturer, Department of Mathematics, Western University, London, Canada

Fall 2016

- Taught Methods of Matrix Algebra.

Teaching Assistant, Department of Mathematics, Western University, London, Canada

2012-2016

- Assisted in various graduate and undergraduate courses, encompassing Functional Analysis, Calculus, Methods of Matrix Algebra, Linear Algebra, Methods of Finite Mathematics, and Discrete Mathematics.
- Managed help centres, graded exams, conducted tutorials, and created quizzes.

Taught Courses

- Methods of Finite Mathematics, Western University. Summer 2024
- Methods of Matrix Algebra, Western University. Winter 2024
- Linear Algebra 1, Western University. Fall 2022
- Calculus 3, Iran University of Science and Technology. Fall 2021
- Calculus 2, Iran University of Science and Technology. Winter 2021
- Calculus 1, Iran University of Science and Technology. Fall 2020
- Elementary Local Differential Geometry, Iran University of Science and Technology. Winter 2020
- Differential Equations, Iran University of Science and Technology. Winter 2020
- Calculus 1, Iran University of Science and Technology. Fall 2019
- Calculus 3, Iran University of Science and Technology. Fall 2019
- Foundations of Matrices and Linear Algebra, Iran University of Science and Technology. Winter 2019
- Calculus 2, Iran University of Science and Technology. Winter 2019
- Foundations of Geometry, Iran University of Science and Technology. Fall 2018
- Calculus 1, Iran University of Science and Technology. Fall 2018
- Calculus 1, Iran University of Science and Technology. Winter 2018
- Calculus 2, Iran University of Science and Technology. Winter 2018
- Calculus 1, Iran University of Science and Technology. Fall 2017
- Calculus 2, Iran University of Science and Technology. Fall 2017
- Methods of Matrix Algebra, Western University. Fall 2016
- Differential Equations, University of Applied Science and Technology. Winter 2012
- Differential Equations, Azad University of Boueinzahra. Summer 2011
- Probability and Statistics, Azad University of Boueinzahra. Summer 2011
- Calculus 2, Azad University of Boueinzahra. Winter 2011
- Probability and Statistics, Azad University of Boueinzahra. Winter 2011

Certificates

- Communication in the Canadian Classroom (12 hours), Teaching Support Centre, Western University. Fall 2022
- Teaching in the Canadian Classroom (16 hours), Teaching Support Centre, Western University. Fall 2022
- The Language of Research Presentations (10 hours), Teaching Support Centre, Western University. Fall 2022

Research Interests

- Non-commutative Geometry
- Operator Algebras and C^* -algebras
- Spectral Geometry
- Geometric Analysis
- Harmonic Analysis

Publications

- On Logarithmic Sobolev Inequality for the Non-commutative Two Torus, joint with M. Khalkhali, *J. Pseudo-Differ. Oper. Appl.* Vol. 8, Issue 3, pp 453- 484 (2017).
- A Scalar Curvature Formula for the Non-commutative Three Torus, joint with M. Khalkhali and A. Moatadelro, arXiv:1610.04740. (2016)

Talks and Presentations

- Multiplicative Domains and Decomposable Maps, Institute for Research in Fundamental Sciences, Tehran, Iran, September 25, 2019.
- A Glimpse of Coarse Structures: From Metric Spaces to Non-commutative Spaces, Institute for Research in Fundamental Sciences, Tehran, Iran, September 5, 2018.
- A Survey on Curvature of Non-commutative 3-Torus, 49th Iranian Mathematics Conference, Iran University of Science and Technology, Tehran, Iran, August 23-26, 2018.
- A Scalar Curvature Formula for the Non-commutative Three Torus, NCG Seminar, Western University, October 2016.
- Spin Manifolds and Dirac Operators, NCG Seminar, Western University, January 2015.
- Clifford Algebras and Their Representations II, NCG Seminar, Western University, January 2015.
- Clifford Algebras and Their Representations I, NCG Seminar, Western University, January 2015.
- An Operator Algebraic Proof of Uniformization Theorem, NCG Seminar, Western University, April 2014.
- Dirac Operators and Geodesic Metric on the Harmonic Sierpinski Gasket, Oral Comprehensive Exam, Western University, March 2013.
- Dirac Operators and Geodesic Metric on the Sierpinski Gasket, NCG Seminar, Western University, March 2013.
- Connes' Trace Theorem, NCG Seminar, Western University, February 2013.
- Dixmier Trace, NCG Seminar, Western University, January 2013.
- Hecke C^* -algebras, NCG Seminar, Western University, October 2012.
- Introduction to Operator Algebras III: Gelfand-Naimark Theorem, NCG Seminar, Western University, October 2012.
- Introduction to Operator Algebras II: Gelfand-Naimark Theorem, NCG Seminar, Western University, September 2012.
- Introduction to Operator Algebras I: Gelfand-Naimark Theorem, NCG Seminar, Western University, September 2012.

Conferences and Programs Attended

- 49th Iranian Mathematics Conference, Iran University of Science and Technology, Tehran, Iran, August 23-26, 2018.
- Conference on Geometry, Representation Theory and the Baum-Connes Conjecture, Fields Institute, Toronto, Canada, July 18-22, 2016.
- Non-commutative Geometry and Spectral Invariants, Université du Québec à Montréal, Montréal, Canada, June 29- July 3, 2015.
- Non-commutative Geometry Workshop, Western University, London, Canada, June 11-12, 2015.
- Workshop on the Geometry of Non-commutative Manifolds, Fields Institute, Toronto, Canada, March 16-18, 2015.
- Non-commutative Geometry and its Applications, Hausdorff Research Institute for Mathematics, Bonn, Germany, September 1-30, 2014.
- Focus Program on Non-commutative Geometry and Quantum Groups, Fields Institute, Toronto, Canada, June 17-28, 2013.
- Winter School on Operator Algebras, RIMS, Kyoto University, Kyoto, Japan, December 7-16, 2011.
- Conference on C*-Algebras and Related Topics, RIMS, Kyoto University, Kyoto, Japan, September 5-9, 2011.
- Program on Non-commutative Geometry, Institute for Research in Fundamental Sciences (IPM), Tehran, Iran, September 2010-August 2011.
- 40th Iranian Mathematics Conference, Sharif University of Technology, Tehran, Iran, August 17-20, 2009.
- The 2nd School and Conference on Non-commutative Geometry, Institute for Research in Fundamental Sciences (IPM), Tehran, Iran, April 19-30, 2009.
- 18th Seminar on Mathematical Analysis and its Applications, Tarbiat Moallem University, Tehran, Iran, April 14-15, 2009.
- 39th Iranian Mathematics Conference, Shahid Bahonar University, Kerman, Iran, August 24-27, 2008.
- 17th Seminar on Mathematical Analysis and its Applications, Arak University, Arak, Iran, April 23-24, 2008.

Workshops

- Professional Communication Skills, Teaching Support Centre, Western University, Winter 2016.
- Public Speaking: Giving Effective Presentations in Grad School, Teaching Support Centre, Western University, Winter 2016.