

Sarah Chehade

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Education

- Aug. 2016 – (May 2021) » **Ph.D., University of Houston** in mathematics
Research focus: *Quantum information theory*
Thesis advisor: *Dr. Anna Vershynina*
- Aug. 2014 – May 2016 » **Bachelor of Science, University of Houston** in mathematics,
with a minor degree in Leadership studies
- Aug. 2012 – May 2014 » **Associates of Science and Arts, Weatherford Community College**
general degree

Research Publications

- 1 Chehade, S. (2020). Saturating the data processing inequality for α - z Rényi relative entropy. *arXiv preprint arXiv:2006.07726*.
- 2 Chehade, S. S., & Vershynina, A. (2019). Quantum entropies. *Scholarpedia*, 14(2), 53131.

Talks, Presentations, and Panelist

Invited Talks

- Nov. 2020 » **Centre for Quantum Technologies (CQT)**, National University of Singapore (NUS)
» **Beyond IID in Information Theory**, Stanford University
» **Brazos Analysis Seminar**, Texas A&M University
- June 2020 » **Mathematical Challenges in Quantum Mechanics**, Como Italy, Cancelled due to COVID-19.
- May 2020 » **Noncommutative Geometry and Operator Algebras**, University in Nashville Tennessee, Cancelled due to COVID-19.

Contributing Talks

- Feb. 2020 » **Texas Women in Mathematics Symposium**, Texas A&M University
- March 2019 » **Analysis seminar**, University of Houston
- Jan. 2016 » **Nebraska Conference for Undergraduate Women in Mathematics**, University of Nebraska, Lincoln

Invited Panelist

- April 2020 » **Career Panel Series**, Texas A&M University, Cancelled due to COVID-19.
- Nov. 2018 » **Pi Mu Epsilon Graduate School Workshop**, University of Houston

Poster Presentation

- Oct. 2015 » **Undergraduate Research Day**, University of Houston

Conferences and Workshops

- Oct. 2020 » **East Coast Operator Algebra Symposium**, online conference
University of Virginia
- Aug. 2020 » **Ari Laptev's 70th birthday conference**, online conference
Norwegian University of Science and Technology, Trondheim, Norway
- Summer 2020 » **One World IAMP Mathematical Physics Seminar**, ongoing online seminar series
- Feb. 2020 » **Texas Women in Mathematics Symposium (TWIMS)**, Texas A&M University
- June 2019 » **Greater Plains Operator Theory Symposium (GPOTS)**, Texas A&M University
- May 2019 » **Applications to Quantum Information Theory, Operator algebras, groups, and applications**, Autonomous University of Madrid, Springain
- April 2019 » **Association for Women in Mathematics Research Symposium**, Rice University
- March 2019 » **Brazos Analysis Seminar**, University of Houston
- Sept. 2018 » **Brazos Analysis Seminar**, Texas A&M University
- April 2018 » **Graduate Student Topology and Geometry Conference**, University of Illinois at Chicago
- March 2018 » **Brazos Analysis Seminar**, Baylor University
- Dec. 2017 » **Texas Women in Mathematics Symposium**, Sam Houston State University
- Oct. 2017 » **East Cost Operator Algebras Symposium**, University of Louisiana at Lafayette
- May 2017 » **Greater Plains Operator Theory Symposium**, Texas Christian University
- April 2017 » **Association for Women in Mathematics Research Symposium**, University of California, Los Angeles
- March 2017 » **Intensive Research Program on Operator Algebras, Dynamics and Interactions**, Autonomous University of Barcelona, Springain

Relevant Graduate Courses

- Fall 2020 » *Analysis special topics course: High-Dimensional Measures and Geometry*
- Spring 2020 » *Quantum Computation Theory*
- Fall 2019 » *Probability*
Analysis special topics course: Analysis of L_p spaces
- Spring 2019 » *Functional Analysis II*
- Fall 2018 » *Functional Analysis I*
Quantum Information Theory
- Spring 2018 » *Riemannian Geometry*
Analysis special topics course: Operator Space Theory
Analysis special topics course: Foundations of Quantum Information
- Fall 2017 » *Topology*
Analysis special topics course: Functional Analysis
Analysis special topics course: Theory of Representations of Infinite Groups
- Spring 2017 » *Measure Theory II*
Modern Algebra II
Applicable Analysis II
- Fall 2016 » *Measure Theory I*
Modern Algebra I
Applicable Analysis I

Professional Development

- Summer 2019 »» **Math-to-Industry Boot Camp**, *Institute for Mathematics and its Applications (IMA)*. An intense six-week summer program designed to provide graduate students with training and experience that is valuable for employment outside of academia. The boot camp consists of courses in the basics of programming, data analysis, and mathematical modeling. Students will work in teams on projects and will be provided with soft skills training.
- Summer 2016 »» **Enhancing Diversity in Graduate Education (EDGE)**, *Purdue University* An intense summer program including two four-week core courses, a mini-course on a selected area of mathematical research, and problem sessions aimed at preparing participants for graduate qualifying exams.

Teaching Experience

- Aug. 2016 – May 2020 »» **Department math tutor**, college algebra, pre-calculus, calculus I II III, linear algebra, probability, ordinary differential equations, transitions to advanced mathematics, math logic, finite math, ...
- Spring 2020 »» **Graduate Teacher's Assistant**, Calculus II, 20 students, invitation class only
- Fall 2019 »» **Graduate Teacher's Assistant**, Calculus I, 18 students, invitation class only
- Spring 2019 »» **Graduate Teacher's Assistant**, Calculus II, 250 students, online
- Winter 2018 »» **Graduate Teacher's Assistant**, Calculus I, 60 students, online
- Fall 2018 »» **Instructor of Record**, Calculus for Business and Life Science, 98 students
- Summer 2018 »» **Graduate Teacher's Assistant**, Pre-calculus, 20 students
- Spring 2018 »» **Lead Graduate Teacher's Assistant**, Calculus I, 120 students
- Fall 2017 »» **Lead Graduate Teacher's Assistant**, Calculus I, 120 students
- Summer 2017 »» **Graduate Teacher's Assistant**, Calculus I, 100 students, online
- Spring 2017 »» **Graduate Teacher's Assistant**, Calculus II, 100 students, online
- Fall 2016 »» **Graduate Teacher's Assistant**, Calculus I, 60 students

Employment History

- Oct. 2019 – »» **Data Scientist**, Layer Inc. North America
Create and design forecasting models using machine learning and statistical modeling to improve inventory predictions.
Daily activities include data cleaning, data analysis, data visualization.
- 2013 – 2014 »» **Bank Teller**, First Financial Bank
Complete customer transactions and account services.
Maintain cash supply and book keeping.
Sell bank products to customers.

Service Activities

- (Spring 2021) »» UH NSM and ENG Graduate Student Spring Networking Event
NSM representative and organizing committee member
- Oct. 2020 »» Article reviewer for the AWM- Springer book
- Aug. 2020 »» UH ad hoc grievance committee member
NSM representative

Service Activities (continued)

- Aug. 2019 – (May 2021) » Natural Science and Mathematics Graduate Student Advisory Board
Mathematics Department representative, University of Houston
- Aug. 2019 – (May 2021) » Math department's new graduate student mentor,
Point of contact for incoming graduate students, University of Houston
- April 2019 » Association for Women in Mathematics Research Symposium
Special session organizer, Rice University
- March 2019 » Chevron's Girls Engineering the Future STEM Day,
Booth organizer and volunteer, College of Engineering University of Houston
- Feb. 2019 » Girls Exploring Math And Science (GEMS),
Volunteer and boot organizer, Houston Museum of Natural Science
- Nov. 2018 » 3rd Annual Texas Women in Mathematics Symposium (TWIMS),
Organizing committee member, University of Houston
- Aug. 2018 – May 2019 » Association for Women in Mathematics,
Chapter President, University of Houston
- Aug. 2017 – May 2018 » American Mathematical Society,
Chapter Vice President, University of Houston
- Aug. 2016 – May 2017 » American Mathematical Society,
Chapter Secretary, University of Houston
- Aug. 2014 – May 2018 » Cougars in Houston Area Math Program (CHAMP),
Administrator and volunteer, University of Houston

Professional Affiliations

- 2016 – » Enhancing Diversity in Graduate Education (EDGE)
» American Mathematical Society (AMS)
- 2017 – » Association for Women in Mathematics (AWM)
- 2019 – » Society for Industrial and Applied Mathematics (SIAM)

Skills

- Languages » Mother tongue: English
Fluent in: Arabic
- Coding » R (R-studio) - high proficiency
Python - moderate proficiency
Matlab - moderate proficiency
- Type-setting » \LaTeX - high proficiency
- Web Development » HTML - moderate proficiency
- Miscellaneous » Teaching
Training
Student mentoring
Microsoft Office

References

Available on Request