Yanlai Chen

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Higher Education:

09/2002 – 07/2007: Ph.D. in Applied Mathematics, School of Mathematics, University of Minnesota, Twin Cities.   Major: Numerical Analysis   Advisor: Prof. Cockburn, Bernardo. Date conferred: 7/31/2007.

09/2006 – 08/2007: M.S. in Computer Science, Department of Computer Science and Engineering, University of Minnesota, Twin Cities.
Advisor: Prof. Roumeliotis, Stergios. Date Conferred: 10/31/2007.

09/1997 – 07/2002: B.S. Department of Mathematics, University of Science & Technology of China (USTC), Hefei, China.

Academic Appointments:

08/2010 – Now: Assistant, Associate, and Full Professor of Mathematics, University of Massachusetts, Dartmouth.

08/2007 – 07/2010: Postdoctoral Research Associate, Division of Applied Mathematics, Brown University.

Administrative Appointments:

07/2024 –   : Chief Research Officer (CRO), University of Massachusetts, Dartmouth.

09/2020 – 06/2024: (Co-)Graduate Program Director, Engineering and Applied Science (EAS), University of Massachusetts, Dartmouth.
Major achievements: Advocacy toward 50% student health insurance subsidy. Prioritization of EAS operating budget toward student support via summer fellowship. Supervision of the expansion of the EAS program from 4 to 6 tracks, notably introducing the highly successful Machine Learning and Data Science (MLDS) PhD track which I conceived and spearheaded the development of. My four-year tenure also marked a significant increase of total EAS enrollment of more than 40%.

09/2020 -   : Program Director, ACCOMPLISH STEM Scholarship Program, University of Massachusetts, Dartmouth.
Major achievements: First-ever S-STEM grant. Formation of a 11-person team from 8 STEM departments. Supporting 28 undergraduate students of need across all STEM disciplines (as of 2024). Championship of contextualized computing pedagogy on campus.

01/2022 – 07/2022: Interim Co-Director, Center for Scientific Computing and Data Science Research,

University of Massachusetts, Dartmouth.

Major achievements: Expansion of CSCDR by two members.

Courtesy Appointments / Long-term Visits:

01/2020 – 05/2020: Program organizer and Research fellow, Institute for Computational and Experimental Research in Mathematics (ICERM).

01/2018 – 05/2018: Visiting Associate Professor, Massachusetts Institute of Technology.

09/2017 – 01/2018: Visiting Associate Professor, Brown University.

08/2010 – 08/2013: Visiting Assistant Professor, Brown University.

Research Interests:

1. Numerical Analysis, Scientific Computing, Computational Partial Differential Equations.
2. Reduced-order Modeling, Dimension Reduction, Optimization, Inverse Problems.
3. Data Mining, Scientific Machine Learning, Image Processing, Optimal Mass Transport.
4. Fast Neural Networks for Partial Differential Equations, Meta-learning.
5. Discontinuous Galerkin (DG) Finite Element Methods, Hybridizable DG, Adaptive Mesh Refinement.
6. Uncertainty Quantification, Fractional order partial differential equations.

Publications:

Published/Accepted:

1. **Y. Chen**, B. Cockburn, *An adaptive high order discontinuous Galerkin method with error control for the Hamilton-Jacobi equations. Part I : the one dimensional steady state case.* J. Comput. Phys., v 226/1 (2007), pp. 1027-1058.

2. **Y. Chen**, J.S. Hesthaven, Y. Maday, J. Rodriguez*, A Monotonic Evaluation of Lower Bounds for Inf-Sup Stability Constants in the Frame of Reduced Basis Approximations.* C. R. Acad. Sci. Paris, Ser. I 346 (2008) 1295 - 1300.

3. **Y. Chen**, J.S. Hesthaven, Y. Maday, J. Rodriguez, *Improved Successive Constraint Method Based A Posteriori Error Estimate for Reduced Basis Approximation of 2D Maxwell's Problem.* ESAIM: M2AN 43 (2009) 1099 - 1116.

4. **Y. Chen**, J.S. Hesthaven, Y. Maday, J. Rodriguez, *Certified Reduced Basis Methods and Output Bounds for the Harmonic Maxwell's Equations*, SIAM J. Sci. Comput. vol. 32, 2, pp. 970--996, 2010.

5. D.B.P. Huynh, D.J. Knezevic, **Y. Chen**, J.S. Hesthaven, A.T. Patera, *A Natural-Norm Successive Constraint Method for Inf-Sup Lower Bounds,* Comput. Methods Appl. Mech. Engrg. 199 (2010) 1963 - 1975.

6. **[Refereed Proceedings] Y. Chen**, J.S. Hesthaven, Y. Maday, *A Seamless Reduced Basis Element Method for 2D Maxwell's Problem: An Introduction*. In Spectral and High Order Methods for Partial Differential Equations-Selected papers from the ICASOHOM'09 conference, J Hesthaven and EM Rønquist (eds). 2011, Volume 76, 141-152, DOI: 10.1007/978-3-642-15337-2_11.

7. **Y. Chen**, B. Cockburn, *Analysis of variable-degree HDG methods for Convection-Diffusion equations. Part I: General nonconforming meshes.* IMA J Numer Anal (2012) 32 (4): 1267 - 1293.

8. **Y. Chen**, J.S. Hesthaven, Y. Maday, J. Rodriguez, *Certified Reduced Basis Method for*

Electromagnetic Scattering and Radar Cross Section Estimation. Comput. Methods Appl. Mech. Engrg. 233 (2012) 92 - 108.

9. **Y. Chen**, S. Gottlieb, *Reduced Collocation Methods: Reduced basis methods in the collocation framework.* J. Sci. Comput. (2013) 55: 718 - 737.

10. **Y. Chen**, B. Cockburn, *Analysis of variable-degree HDG methods for Convection-Diffusion equations. Part II: Semimatching nonconforming meshes*. Math. Comp. (2014) 83 (285): 87 - 111.

11. **Y. Chen**, S. Gottlieb, Y. Maday, *Parametric analytical preconditioning and its application to Reduced Collocation Methods*. C. R. Acad. Sci. Paris, Ser. I, 352 (2014), 661-666.

12. **Y. Chen**, *Reduced Basis Decomposition: a Certified and Fast Lossy Data Compression Algorithm.* Computers and Mathematics with Applications, 70 (2015) 2566 -- 2574.

13. **[Refereed Proceedings]** M. Perkins, **Y. Chen**, *Using Visualization and Analysis with Efficient Dimension Reduction Techniques to Determine Underlying Factors in Hospital Inpatient Procedure Costs.* 2015 IEEE Conference on Visual Analytics Science and Technology (VAST), vol. 00, no. , pp. 205-206, 2015, doi:10.1109/VAST.2015.7347680

14. **Y. Chen**, S. Gottlieb, A. Heryudono, A. Narayan, *A Reduced Radial Basis Function Method for Partial Differential Equations on irregular domains.* J. Sci. Comput, (2016) 66(1):67–90.

15. **Y. Chen,** B. Cockburn, B. Dong, *Superconvergent HDG methods for linear, stationary, third-order equations in one-space dimension.* Math. Comp. 85 (2016), 2715-2742.

16. **Y. Chen**, *A Certified Natural-Norm Successive Constraint Method for Parametric Inf-Sup Lower Bounds.* Applied Numer. Math, 99 (2016) 98 – 108.

17. **Y. Chen,** B. Cockburn, B. Dong, *A new discontinuous Galerkin method, conserving the discrete H^2-norm, for third-order linear equations in one space dimension*. IMA J Numer Anal (2016) 36 (4): 1570-1598.

18. J. Jiang, **Y. Chen**, A. Narayan, *A goal-oriented RBM-Accelerated generalized polynomial chaos algorithm*. SIAM/ASA JUQ 4 (2016), no. 1, 1398–1420.

19. J. Jiang, **Y. Chen**, A. Narayan, *Offline-Enhanced Reduced Basis Method Through Adaptive Construction of the Surrogate Training Set,* J. Sci. Comput. (2017) 73 (2-3): 853-875.

20. B. Dong, J. Jiang, **Y. Chen**, *Optimally Convergent Hybridizable discontinuous Galerkin method for Fifth-order Korteweg de-Vries type equations,* ESAIM: M2AN 52 (2018) 2283 - 2306.

21. **Y. Chen**, J. Jiang, A. Narayan, *A robust error estimator and a residual-free error indicator for reduced basis methods,* Computers and Mathematics with Applications, Computers and Mathematics with Applications, 77 (2019) 1963 -- 1979.

22. L. Ji, **Y. Chen**, Z. Xu, *A reduced basis method for the nonlinear Poisson-Boltzmann equation*, Adv. Appl. Math. Mech., (2019) 11 (5): 1200-1218.

23. Y. Liu, T. Chen, **Y. Chen** and C.-W. Shu, *Certified offline-free reduced basis (COFRB) methods for stochastic differential equations driven by arbitrary types of noise*, J. Sci. Comput. 81, 1210–1239 (2019).

24. H. Antil, **Y. Chen**, A. Narayan, *Certified reduced basis methods for fractional Laplace equations via extension,* SIAM J. Sci. Comput. (2019) 41 (6): A3552-A3575.

25. J. Jiang, **Y. Chen,** *Adaptive greedy algorithms based on parameter-domain decomposition and reconstruction for the reduced basis method,* Internat. J. Numer. Methods Engrg. 121 (23), 5426 – 5445 (2020).

26. **Y. Chen**, L. Ji, A. Narayan, Z. Xu, *L1-based reduced over collocation and hyper reduction for steady state and time-dependent nonlinear equations,* J. Sci. Comput 87, 10 (2021).

27. Y**. Chen,** S. Gottlieb, L. Ji, Y. Maday, *An EIM-degradation free reduced basis method via over collocation and residual hyper reduction-based error estimation*. J. Comput. Phys., 444 (2021) 110545.

28. Z. Peng, **Y. Chen**, Y. Cheng, F. Li*, A reduced basis method for radiative transfer equation*. J. Sci. Comput., (2022) 91:5.

29. H. Dinh, H. Antil, **Y. Chen**, E. Cherkaev, A. Narayan, *Model reduction for fractional elliptic problems using Kato's formula,* Math. Control Relat. Fields 2022, 12 (1) : 115-146.

30. **Y. Chen**, L. Ji, Z. Wang, *A hyper-reduced MAC scheme for the parametric Stokes and Navier-Stokes equations,* J. Comput. Phys., 466 (2022) 111412.

31. S. Hou, **Y. Chen,** Y. Xia, F*ast L2 optimal mass transport via reduced basis methods for the Monge-Ampère equation,* SIAM J. Sci. Comput. 2022 44:6, pp, A3536 – A3559.

32. Y**. Chen,** B. Dong, R. Pereira, A *new conservative discontinuous Galerkin method via implicit penalization for the generalized Korteweg--de Vries equation,* SIAM J. Num. Anal., Vol. 60, No. 6, (2022) pp. 3078 - 3098.

33. **Y. Chen**, S. Koohy, GPT-PINN: G*enerative Pre-Trained Physics-Informed Neural Networks toward non-intrusive Meta-learning of parametric PDEs,* Finite Elements in Analysis and Design, 228 (2024), 104047.

34. Z. Peng, **Y. Chen**, Y. Cheng, F. Li*, A micro-macro decomposed reduced basis method for the time-dependent radiative transfer equation*. SIAM Multiscale Modeling & Simulation 2024 22:1, 639-666.

35. **Y. Chen**, Y. Ji, A. Narayan, Z. Xu, *TGPT-PINN: Nonlinear model reduction with Transformed GPT-PINNs,* Comput. Methods Appl. Mech. Engrg. 430 (2024), 117198.

36. Y. Ji, L. Ji, **Y. Chen**, Z. Xu, M*CMS-RBM: Multi-Component Multi-State Reduced Basis Method toward Efficient Transition Pathway Identification for Crystals and Quasicrystals,* SIAM J. Sci. Comput., 2024 46(6), B785 – B805.

37. D. Gillcrist, N. Alemazkoor, **Y. Chen**, M. Tootkaboni, *Design of Experiments via Multi-Fidelity Surrogates and Statistical Sensitivity Measures,* Journal of Machine Learning for Modeling and Computing, Vol. 5, No. 4 (2024).

38. S. Hou, **Y. Chen,** Y. Xia, *A reduced basis warm-start iterative solver for the parameterized linear system,* Beijing J. of Pure and Appl. Math., Vol. 2, No. 1 (2025) pp. 123 - 146.

Journal articles submitted:

39. L. Ji, Z. Peng, **Y. Chen**, *AAROC: Reduced Over-Collocation Method with Adaptive Time Partitioning and Adaptive Enrichment for Parametric Time-Dependent Equations*. Submitted.

40. **Y. Chen**, Y. Ji, Z. Xu, *VGPT-PINN: Viscosity-enhanced Generative Pre-Trained Physics Informed Neural Networks for parameterized nonlinear conservation laws*. Submitted.

Other Publications / Preprints:

41. **[Education Journal] Y. Chen,** G. Davis, S. Gottlieb, A. Hausknecht, A. Heryudono, and S. Kim, *Transformation of a Mathematics Department's Teaching and Research Through a Focus on Computational Science*. Journal of Computational Science Education, (2013) 4(1), pp. 24-29.

42. **[Extensive Foreword] Y. Chen,** B. Dong, C.-W. Shu, *A Foreword to the Special Issue in Honor of Professor Bernardo Cockburn on His 60th Birthday: A Life Time of Discontinuous Schemings*, J. Sci. Comput. (2018) 77 (3): 1303 – 1309.

43. **Y. Chen**, S. Gottlieb, L. Ji, Y. Maday, Z. Xu, *L1-ROC and R2-ROC: L1- and R2-based Reduced Over-Collocation methods for parametrized nonlinear partial differential equations,* arXiv:1906.07349.

44. N. C. Nguyen, **Y. Chen**, *Reduced-basis method for the iterative solution of parametrized symmetric positive-definite linear systems*, arXiv: 1804.06363.

Theses:

45. **Y. Chen**, *Some Numerical Experiments on Burgers Equation,* B.S. Dissertation, University of Science and Technology of China, May 2002.

46. **Y. Chen**, A*n adaptive high order discontinuous Galerkin method with error control for the Hamilton-Jacobi equations,* Ph. D. Dissertation, University of Minnesota, July 2007.

Major External Grants Received (>$3M, with >$1.3M as PI):

1. **[Active, Research]** Co-PI (PI Sigal Gottlieb): *Computationally and Energy Efficient Mixed Precision and Mixed-model Numerical Methods,* Air Force Office of Scientific Research FA9550-23-1-0037, December 15, 2022 - Dec 14, 2025, $392,064.

2. **[Active, Research]** PI (Co-PI Sigal Gottlieb): *Reduced basis enhancements of neural networks and their application to quantum materials simulation*, NSF award DMS-2208277, 09/01/2022 – 08/31/2025, $296,555.

3. [**Active, Education Research and Scholarship]** PI (Co-PI Pauline Entin, Sigal Gottlieb, Shakhnoza Kayumova, Gaurav Khanna): *Implementation of a Contextualized Computing Pedagogy in STEM Core Courses and Its Impact on Undergraduate Student Academic Success, Retention, and Graduation*, NSF S-STEM-Schlr Sci Tech Eng & Math, award DUE-2030552, 09/01/2020 – 08/31/2025, $650,000.

4. **[Past, Research]** Co-PI (PI Sigal Gottlieb): *Efficient Strong Stability Time Discretizations and Robust Automated Splitting for Time Evolution of Problems with Multiple Time-Scales,* Air Force Office of Scientific Research FA9550-18-1-0383, August 1, 2018 - Nov 30, 2022, $299,997.

5. **[Past, Research]** PI (Co-PI Sigal Gottlieb): *Rigorous Development of an Efficient Reduced Collocation Approach for High-Dimensional Parametric Partial Differential Equations,* NSF award DMS-1719698, 08/01/2017 – 07/31/2021, $158,494.

   a. **Supplemental Grant:** NSF award DMS-2132588, 07/31/2021 – 07/31/2022, $20,920.

6. **[Past, Equipment]** Co-PI (PI Sigal Gottlieb): DURIP: A *multi-architecture hardware computing cluster for the development and efficient implementation of a variety of robust and scalable numerical algorithms*, AFOSR, 02/01/2022 – 01/31/2023, $600,000.

7. **[Past, Research Leave Award]** Organizer: Spring 2020 semester program at ICERM (Institute for Computational and Experimental Research in Mathematics, Providence RI), *Model and dimension reduction in uncertain and dynamic systems,* Supported, via ICERM, by NSF award DMS-1439786 and the Simons Foundation Grant No. 50736, 01/27/2020 – 05/01/2020, $23,164.

8. **[Past, Equipment]** Co-PI (PI Sigal Gottlieb): DURIP: *A heterogeneous terascale computing cluster for the development and efficient implementation of high order numerical methods*, ONR, 05/01/2018 – 04/30/2019, $643,899.

9. **[Past, Conference]** PI (Co-PI Bo Dong): *Workshop: Recent Advances and Challenges in Discontinuous Galerkin Methods and Related Approaches,* NSF award DMS-1720825, 06/01/2017 – 05/31/2018, $15,000.

10. **[Past, Research]** Sole PI: *Developing Reduced Basis Methods in the Galerkin and Collocation Framework*, NSF award DMS-1216928, 08/01/2012 – 07/31/2016, $161,113.

11. **[Past, Research]** Co-PI (PI Sigal Gottlieb): *Simulation and Visualization Approaches to Big Data,* UMass President's office Science and Technology Initiatives, 2013 – 2014, $150,000.

Internal-External Grants Received:

12. **[Active, Research]** Co-PI (PI Alfa Heryudono, Other Co-PIs Sigal Gottlieb, Gaurav Khanna): *Computational Strategies for Scientific Data-Driven Learning for Marine and UnderSea Technology Applications,* UMass Dartmouth Marine and Undersea Technology Research Program Sponsored by the Office of Naval Research, September 17, 2020 – September 16, 2023, $308,682.

13. **[Active, Research]** Co-PI (PI Mazdak Tootkaboni, Other Co-PI Alireza Asadpoure), M*ulti-Fidelity Information Fusion for Accelerated Predictive Modeling and Optimal Design of High Entropy Alloys,* UMass Dartmouth Marine and Undersea Technology Research Program Sponsored by the Office of Naval Research, December, 2022 – December, 2025, $332,900.

Major Internal Grants Received:

14. **[Past, Research]** Co-PI (PI Mehdi Raessi): *Development of a reduced-basis, physics-driven model for fuel spray-wall interaction in internal combustion*, UMass Dartmouth Multidisciplinary Seed Funding (MSF) Program, 3rd round, Spring - Summer 2017, $34,497.

15. **[Past, Research]** Co-PI (PI Vanni Bucci): *Model order reduction techniques for patient-specific data inference for gut microbiota dynamics*, UMass Dartmouth Multidisciplinary Seed Funding (MSF) Program, 1st round, Spring 2014, $31,000.

16. **[Past, Research]** Sole PI: *A Fast and Reliable Simulator for Electromagnetic Scattering Problems with Uncertainty,* UMass Dartmouth Chancellor's Research Fund and Joseph P. Healey Endowment Grants, 2011 -- 2012, $9,700.

Professional Activities and Services:

Doctoral students: (Co-)advisor of the following PhD students:

Christopher Bresten (2012/09 – 2017/05), UMassD EAS student, Thesis topic: Online efficient reduced collocation method for nonlinear PDEs; First job after graduation: Postdoctoral scholar at Bentley University.

Jiahua Jiang (2013/09 – 2018/08), UMassD EAS student, Thesis topic: Reduced basis method, its enhancement, and integration with generalized Polynomial

Chaos for Uncertainty Quantification; First job after graduation: Postdoctoral scholar at Virginia Tech University.

Rebecca Pereira (2017/09 – 2023/5), UMassD EAS student, Thesis topic: Fully conservation discontinuous Galerkin methods for the Korteweg–De Vries (KdV) equation. First job after graduation: National Security Agency.

Richard Bellizzi (2018/09 – 2023/5), UMassD (part-time) EAS student advised by Alfa Heryudono, Thesis topic: Strategic Implementation of Computational Methodologies in Lubricant Testing Analysis. First job after graduation: (Continuing at) NYE Lubricants.

Matthew Cormier (2019/09 - , On Leave), UMassD EAS student, Thesis topic: Neural network approaches for time-marching.

David Gillcrist (2020/09 -), UMassD EAS student, Thesis topic: Multi-fidelity inverse parameter analysis.

Haolan Zheng (2023/09 -), UMassD EAS student, Thesis topic: Physics-based model reduction for operator learning.

Oversea advisor of the following PhD students:

Lijie Ji (2018/01 – 2021/05), PhD student at Shanghai Jiaotong University advised by Zhenli Xu. Thesis topic: Reduced collocation approaches for nonlinear problems. First job after graduation: Postdoc at Shanghai Jiaotong University.

Shijin Hou (2019/09 – 2024/06), PhD student at the University of Science and Technology of China advised by Yinhua Xia. Thesis topic: Fast PDE approaches in Machine Learning. First job after graduation: Lecturer at Henan University.

Yajie Ji (2022/09 – 2025/07), PhD student at Shanghai Jiaotong University advised by Zhenli Xu. Thesis topic: Fast algorithms for quasi-periodic structures and physics-informed machine learning.

Undergrad students:	Andrew Davey (BS,'14, Colorado School of Mines), Ian Camerlin (BS,'15), Peter Takahashi (BS, '17, Yale), Abigail Reid (BS, '17), Jonathan Curtis (BS, '18), Matthew Cormier (BS, '19), Jacob Sousa (BS,'14), Chase Parenteau (BS, '22), Shawn Koohy (BS, '24, UPenn, First place undergraduate poster presentation in mathematics and statistics at the Emerging Researchers National Conference, March 2024; Outstanding Student Research Award from UMass Dartmouth, April 2024; Second place poster award at the third North American High Order Methods Conference, June 2024).
PhD committees:	Proposal and thesis committee member for: Christopher Bresten, Sidafa Conde, Zachary Grant, Leah Isherwood, Jiahua Jiang, Jacob Sousa, Richard Bellizzi, Rebecca Pereira, Shayan Razi, Esmaeil Rezaei, all of UMass Dartmouth; Zexin Liu of University of Utah (Spring 2022); Sridhar Chellappa of the Max Planck Institute Magdeburg, Germany (Fall 2022); Yue Zhao of Shanghai JiaoTong University (Spring 2023), Yihui Tu of Shanghai JiaoTong University (Summer 2023).

MS committees:	Thesis committee member for: Nicholas Moniz (Physics), Mohammod Minhajur Rahman (Civil Engineering).
Other Mentoring:	ALANA (African, Latino, Asian, and Native American) mentoring program 2008 - 2009, Brown University.
	CSUMS program, 2010 -- 2013, UMass Dartmouth: numerous class projects.
Editorial Board:	(Guest editor) Journal of Scientific Computing, 2017 - 2018. (Guest editor) Journal of Scientific Computing, 2020 - 2021. (Review Editor) Frontiers in Applied Mathematics and Statistics - Numerical Analysis and Scientific Computation, 2022 - .
Grant Reviewing:	National Science Foundation Panel Reviews, Army Research Office (ARO) proposal review, Natural Sciences and Engineering Research Council of Canada (NSERC) external review, AFOSR proposal review, Department of Energy Advanced Scientific Computing Research (ASCR) proposal review.
Peer Reviewing:	Invited Reviewer for **forty eight journals**: Mathematics of Computation, Journal of Scientific Computing, SIAM Journal on Scientific Computing, SIAM Journal on Numerical Analysis, ICOSAHOM Proceedings, Computer Methods in Applied Mechanics and Engineering, Journal of Mathematical Analysis and Applications, International Journal of Computer Mathematics, Journal of Computational Science, Computers and Mathematics with Applications; Computers and Fluids, Applied Numerical Mathematics, ESAIM: Mathematical Modeling and Numerical Analysis (M2AN), Advances in Computational Mathematics (ACOM), Science China Mathematics, Applied Mathematics Letters, Journal of Computational Physics, IET Microwaves, Antennas & Propagation, Communications in Computational Physics, Computational and Applied Mathematics; IMA Journal of Numerical Analysis, Annals of Mathematical Sciences and Applications, Handbook of numerical analysis, MOREPAS, BIT Numerical Mathematics, Calcolo, SeMA journal, Journal of Computational and Applied Mathematics, Bulletin of the Iranian Mathematical Society, Numerische Matematik, Boundary Value Problems, International Journal for Numerical Methods in Engineering, SIAM Multiscale Modeling and Simulation (MMS), Proceedings of the Royal Society A, International Journal for Numerical Methods in Fluids, Communications in Nonlinear Science and Numerical Simulation, Applied Mathematics-A Journal of Chinese Universities, Communications in Mathematics and Statistics, Electronics Transactions on Numerical Analysis (ETNA), Electronics Letters, Communications on Applied Mathematics and Computation, Mathematical Models and Methods in Applied Sciences (M3AS), IEEE Transactions on Circuits and Systems I: Regular Papers, International Journal of Numerical Analysis and Modeling (IJNAM), Journal of Applied Mathematics and Computing (JAMC), Beijing J. of Pure and Appl. Math.,, Nonlinear Dynamics.

Thesis reviewing:	Doctoral thesis from Chile, China, and Germany.
Reviewing:	Invited review writer for Zentralblatt MATH.
Consulting:	Statistics consultant.

Miscellaneous Awards:

2024:	Walter Cass Faculty Recognition Award (presented by the graduating class to a member of the faculty), UMass Dartmouth.
2020:	Faculty Contribution Award**,** Center for Scientific Computing and Visualization Research, UMass Dartmouth.
2010 -- 2019:	Dean's Travel Award**,** College of Arts and Science, UMass Dartmouth.
2010 -- 2015:	Provost's Travel Award, UMass Dartmouth.
2011 -- 2017:	Provost's Seminar Fund.
Spring 2012:	Nominated by Admission Ambassadors to be a mini-lecture presenter on open house.
2007:	Travel Award from MSI, GAPSA and COGS, University of Minnesota.
2007:	Good Teaching Award, School of Mathematics, University of Minnesota.
2006:	Summer School Travel Award, Center for Nonlinear Analysis, Carnegie Mellon University.
2006:	Travel Award, School of Mathematics, University of Minnesota.
1997 – 2001:	USTC Excellent Student Scholarships.

Professional Meetings:

Semester/Summer Program Organization:

1. Organizer (with Serkan Gugercin, Misha Kilmer, Yvon Maday, Shari Moskow, Akil Narayan, and Daniele Venturi) and Point of Contact for the Spring 2020 semester program at ICERM (Institute for Computational and Experimental Research in Mathematics, Providence RI), *Model and dimension reduction in uncertain and dynamic systems*. https://icerm.brown.edu/programs/sp-s20/

2. Organizer (with Akil Narayan, and Minah Oh) for the Summer 2020 eight-week residential program for undergraduate scholars, Summer@ICERM 2020, *Fast learning algorithms for numerical computation and data analysis.* https://icerm.brown.edu/summerug/2020/

3. Organizer (with Serkan Gugercin, Misha Kilmer, Yvon Maday, Shari Moskow, Akil Narayan, and Daniele Venturi) for the Spring 2020 Reunion Event. May 23 – June 10, 2022. https://icerm.brown.edu/events/re-22-sp20/

4. Organizer (with Akil Narayan, and Minah Oh) for the Reunion event of the Summer 2020 eight-week residential program for undergraduate scholars, Summer@ICERM 2020, June 9 – 10, 2022.

Major Conference/Workshop Organization:

5. Organizer (with Steven Leon, Cheng Wang) of the third New England Numerical Analysis Day Conference, April 16, 2011.

6. ICIAM 2011: Organizer (with Gianluigi Rozza), minisymposium on *Reduced Basis Methods and Their Applications*, Vancouver, BC, Canada July 18 - 22, 2011.

7. ICM2AC 2012: Organizer (with Yan Xu, Yinhua Xia), minisymposium on *Superconvergence properties and postprocessing techniques for high-order numerical methods*, Xiamen, Fujian, China July 21 – 25, 2012.

8. ICOSAHOM 2014: Organizer (with Benjamin Stamm, Bernard Haasdonk), minisymposium on *Model reduction: new trends and recent advances*, Salt Lake City, Utah June 23 – 27, 2014.

9. Organizer (with Bo Dong) of the Finite Element Circus Conference, October 16 -- 17, 2015.

10. Organizer (with Andrea Manzoni, Akil Narayan), minisymposium on *Reduced Order Modeling Techniques in Uncertainty Quantification*, Boston MA, USA July 11 – 15, 2016.

11. Organizer (with Bo Dong, Nilima Nigam, Ke Shi, and Wujun Zhang), *Recent Advances and Challenges in Discontinuous Galerkin Methods and Related Approaches*, Institute for Mathematics and its Applications, University of Minnesota Twin Cities, Minneapolis, MN June 29 – July 1, 2017.

12. New England Numerical Analysis Day (NENAD) steering committee member, 2018 - .

13. ICIAM 2019: Organizer (with Gianluigi Rozza, and Annalisa Quaini), minisymposium on *Model reduction in CFD*, Valencia, Spain. July 15 - 19, 2019.

14. Organizer (with Kevin Carlberg, Francisco Chinesta, Misha Kilmer, Yvon Maday, Gianluigi Rozza), *Algorithms for dimension and complexity reduction*, Topical Workshop, ICERM Spring 2020 semester program on *Model and dimension reduction in uncertain and dynamic systems*. Providence, RI, March 16 - 20, 2020.

15. Organizing Committee member for the High Performance Computing Day conferences, originally initiated by the Massachusetts Green High Performance Computing Center affiliate schools, 2022 - .

16. Organizer (with Xingjie Li, Xiaochuan Tian, and Yue Yu), *Numerical techniques for coarse-graining, model reducing and simulation of complex physical systems*, ICIAM 2023, August 20 – 25, 2023, Tokyo, Japan.

17. Organizing Committee member (with Anne Gelb and Yoonsang Lee) for North American High Order Methods Conference (NAHOMCon) 2024. Hanover NH, June 17 – 19, 2024.

18. Organizer, minisymposium on *Design and analysis of machine learning algorithms inspired by traditional numerical methods*, North American High Order Methods Conference (NAHOMCon) 2024. Hanover NH, June 17 – 19, 2024.

19. Organizer (with Sigal Gottlieb, Serkan Gugercin, Misha Kilmer, Fengyan Li, Akil Narayan,), *Computational learning for model reduction*, Week-long Topical Workshop, ICERM, Providence, RI, January 6 - 10, 2025.

Invited Departmental Seminar Talks:

1. Reservoir Engineering Research Institute (RERI), March 19, 2007.
2. Department of Mathematics, Michigan State University, Apri 18, 2008.
3. University of Massachusetts, Dartmouth. March 2, 2010.
4. University of Delaware, Analysis and PDE seminar, November 11, 2010.
5. University of Science and Technology of China, June 3, 2011.
6. Xiamen University, Department of Electrical Sciences, July 25, 2012.
7. Dartmouth College, Hanover, NH, November 5, 2013.
8. Worcester Polytechnic Institute, Worcester, MA, November 10, 2014.
9. Tufts university, Department of Mathematics colloquium, February 13, 2015.
10. Massachusetts Institute of Technology, Department of Aeronautics & Astronautics, Aerospace Computational Design Laboratory seminar, February 20, 2015.
11. Massachusetts Institute of Technology, Department of Mechanical Engineering, MSEAS, June 5, 2015.

12. Southeast University, Nanjing, China. July 15, 2015.
13. University of Science and Technology of China, Hefei, Anhui, China. July 17, 2015.
14. Nankai University, Tianjin, China. July 20, 2015.
15. Beijing Computational Science Research Center (CSRC), Beijing, China. July 22, 2015.
16. University of South Carolina, IMI seminar series, October 21, 2015.
17. University of Notre Dame, ACMS seminar, November 2, 2015.
18. University of Massachusetts Lowell, Math seminar, October 17, 2016.
19. Mitsubishi Electric Research Laboratories, Seminar, December 12, 2016.
20. University of North Carolina Charlotte, Math seminar, October 13, 2017.
21. ShanghaiTech University, School of Information Science and Technology seminar, December 26, 2017.
22. University of Delaware, Department of Mathematical Sciences, Numerical Analysis and PDE seminar, April 12, 2018.
23. University of Connecticut, Department of Mathematics, PDE and Differential Geometry Seminar, October 15, 2018.
24. Massachusetts Institute of Technology, Department of Aeronautics & Astronautics, Aerospace Computational Design Laboratory seminar, November 16, 2018.
25. School of Mathematics, Kinetics discussion group, Xiamen University, Xiamen, Fujian, China, June 2, 2019.
26. School of Economics, Hefei University of Technology, Hefei, Anhui, China, June 25, 2019.
27. School of Mathematics, University of Science and Technology of China, Hefei, Anhui, China, June 28, 2019.
28. School of Mathematics, Hefei University of Technology, Hefei, Anhui, China, August 4, 2019.
29. University of Delaware, Department of Mathematical Sciences, Numerical Analysis and PDE seminar, September 19, 2019.
30. Michigan State University, Department of Computational Mathematics, Science and Engineering, CMSE Colloquium, October 2022.
31. Dartmouth College, Department of Mathematics, Applied and Computational Mathematics Seminar, November 2022.
32. Worcester Polytechnic Institute, Department of Mathematics, Numerical Methods seminar, November 2022.
33. School of Mathematics, University of Science and Technology of China, Hefei, Anhui, China, July 7, 2023.
34. School of Mathematics, Shanghai JiaoTong University, Shanghai, China. July 13, 2023.
35. Baylor University, Applied Math seminar, March 18, 2024.
36. Data-driven physical simulation (DDPS) webinar series, Lawrence Livermore National Laboratory. April 5, 2024.
37. PSU-Purdue-UMD Joint Seminar on Mathematical Data Science, October 21, 2024.

Invited Conference Talks:
38. 7th World Congress on Computational Mechanics (WCCM), Los Angeles, CA, July 16-22, 2006.
39. SIAM Conference on Computational Science and Engineering (CSE), Costa Mesa, CA, February 19-23, 2007.

40. International Conference On Spectral and High Order Methods (ICOSAHOM), Beijing, China, June 18-22, 2007.

41. Discontinuous Galerkin Methods for Partial Differential Equations, Banff International Research Station, Banff, AB, Canada. November 25 – 30, 2007.

42. SIAM Conference on Computational Science and Engineering (CSE), Reno, NV, February 28 - March 4, 2011.

43. New England Numerical Analysis Day 2011, UMass Dartmouth, April 16, 2011.

44. International Conference on Interdisciplinary Applied and Computational Mathematics, Special Session, Hangzhou, China, June 17 - 21, 2011.

45. 7th International Congress on Industrial and Applied Mathematics (ICIAM 2011), DG minisymposium, Vancouver, BC Canada, July 18 - 22, 2011.

46. AMS 2012 Spring Southeastern Section Meeting, University of South Florida, Tampa, FL, March 10 -- 11, 2012.

47. The 11th International Workshop on Finite Elements for Microwave Engineering, FEM 2012, Estes Park, CO, June 4 -- 6, 2012.

48. Eigenvalues/singular values and fast PDE algorithms: acceleration, conditioning, and stability, Banff International Research Station, June 24 – 29, 2012.

49. SIAM Conference on Computational Science and Engineering (CSE), Boston MA, February 25 - March 1, 2013.

50. SIAM Annual Meeting, San Diego, CA, July 8 – 12, 2013.

51. USNCCM12, Raleigh, NC, July 22 – 25, 2013.

52. WCCM XI – ECCM V – ECFD VI, Barcelona, Spain, July 20 – 25, 2014.

53. AMS Fall Southeastern Sectional Meeting, University of North Carolina at Greensboro, Greensboro, NC, November 8 – 9, 2014.

54. UMass System HPC Day, November 14, 2014.

55. 2015 workshop on finite element methods, Beijing Institute for Scientific and Engineering Computing (BJI-SEC). August 8, 2015.

56. 8th International Congress on Industrial and Applied Mathematics (ICIAM 2015), DG minisymposium, Beijing, China. August 10 – 14, 2015.

57. 10th International Conference on Scientific Computing and Applications, The Fields Institute, Toronto, Canada. June 6 – 10, 2016.

58. The Mathematics of Finite Elements and Applications 2016 (MAFELAP 2016), Brunel University London, June 14 – 17, 2016.

59. SIAM Workshop on Parameter Space Dimension Reduction (DR 17), Pittsburgh, PA, July 9 – 10, 2017.

60. The 3rd Annual Meeting of SIAM Central States Section, Colorado State University, Fort Collins, CO. September 29 – October 1, 2017.

61. SIAM Conference on Uncertainty Quantification, Hyatt Regency Orange County, Garden Grove, California. April 16 – 19, 2018.

62. Computational Aspects of Time Dependent Electromagnetic Wave Problems in Complex Materials, ICERM, Providence, RI. June 18 – 22, 2018.

63. SIAM Conference on Computational Science and Engineering (CSE), Spokane, Washington, February 25

– March 1, 2019.

64. 10th International Congress on Industrial and Applied Mathematics (ICIAM 2019), Minisymposium on Model reduction in CFD, Valencia, Spain. July 15 - 19, 2019.

65. American Mathematical Society Fall Southeastern Sectional Meeting, University of Florida, Gainesville, FL November 2-3, 2019.

66. Special session "Recent Advancements in the Numerical Analysis of Nonlinear Partial Differential Equations", The 13th American Institute of Mathematical Sciences (AIMS) Conference on Dynamical Systems, Differential Equations and Applications. May 31 - June 4, 2023, Wilmington, NC USA.

67. Minisymposium "Data-Driven Modeling and Analysis of Complex Systems", Frist annual meeting of the New York-New Jersey-Pennsylvania Section of the Society for Industrial and Applied Mathematics (SIAM-NNP). October 20 – 22, 2023, Newalk, NJ.

68. Minisymposium "Scientific Machine Learning for Partial Differential Equations", the third North American High Order Methods Conference (NAHOMCon), June 17-19, 2024 in Hanover, NH.

69. Minisymposium "Methods for identification, machine learning, and uncertainty quantification of reduced order models of coupled systems", at the 2024 16th World Congress on Computational Mechanics and 4th Pan American Congress on Computational Mechanics (WCCM 2024 / PANACM), July 21-26, 2024 in Vancouver, British Columbia, Canada.

Invited Lectures / Plenary Talks:

70. Guest Lecturer for *Numerical Methods for Uncertainty Quantification - Part 2,* SAMSI 2011 - 12 Program on Uncertainty Quantification, February 22, 2012.

71. Computational Mathematics instructor, *The 2016 Tsinghua Mathcamp*, Tsinghua University, Beijing, China. July 17 – August 13, 2016.

72. Lecturer, *Short course on reduced basis methods*, Shanghai JiaoTong University School of Mathematics, Shanghai, China. December 13 – 15, 2017.

73. Lecturer, Reduced Basis Methods: Certified Machine Learning for Parametric Partial Differential Equations, Lecture Series on High Order Numerical Methods, University of Science and Technology of China. August 11 – 12, 2020.

74. Numerical Analysis of Galerkin ROMs (NA G-ROMs) seminar series, Online. May 16, 2023. https://na-g-roms.github.io/seminars/Yanlai_Chen_2023.html

75. CBMS Conference: Deep Learning and Numerical PDEs, Morgan State University in Baltimore, USA, from June 19 to June 23, 2023.

Other Talks:

76. Finite Element Circus, Rensselaer Polytechnic Institute, Troy, NY. October 24 - 25, 2008.

77. Finite Element Circus, University of Delaware, Newark, DE. April 24 - 25, 2009.

78. Finite Element Circus, University of Tennessee, Knoxville, TN. October 16 – 17, 2009.

79. Joint Mathematics Meeting, San Francisco, CA. January 13 – 16, 2010.

80. International Conference on Applied Mathematics and Interdisciplinary Research, Tianjin, China, June 13 - 15, 2011.

81. 7th International Congress on Industrial and Applied Mathematics (ICIAM 2011), RBM minisymposium, Vancouver, BC Canada, July 18 - 22, 2011

82. Finite Element Circus, University of Connecticut Avery Point. October 14 - 15, 2011.
83. International Conference on Mathematical Modeling, Analysis and Computation (ICM2AC 2012), minisymposium speaker, Xiamen, Fujian, China July 21 – 25, 2012.
84. Finite Element Circus, University of Delaware, Newalk, DE. October 18 – 19, 2013.
85. ICOSAHOM 2014 contributed talk, Salt Lake City, Utah. June 23 – 27, 2014.
86. Finite Element Circus, IMA, Minneapolis, MN. October 24 – 25, 2014.
87. Finite Element Circus, GMU, Virginia. March 27 – 28, 2015.
88. Finite Element Circus, University of Tennessee, Knoxville, TN. March 16 – 17, 2018.
89. Finite Element Circus, University of Delaware, Newark, DE. November 9 – 10, 2018.
90. Finite Element Circus, Bridgewater State University, Bridgewater, MA. March 17 – 18, 2023.
91. Machine learning + X seminar, Crunch group at Brown University, August 18, 2023.

Participation:

92. New England Numerical Analysis Day, University of Rhode Island. April 4, 2009.
93. Finite Element Circus, Brown University, Providence, RI. April 30 – May 1, 2010.
94. New England Numerical Analysis Day, Worcester Polytechnic Institute. May 8, 2010.
95. Finite Element Circus, University of Minnesota. November 5 - 6, 2010.
96. Joint Mathematics Meeting, Boston, MA. January 4 -- 7, 2012.
97. Finite Element Circus, Rutgers University, Piscataway, NJ. April 13 – 14, 2012.
98. Finite Element Circus, Wayne State University, Detroit, MI. March 28 – 29, 2014.
99. Finite Element Circus, Worcester Polytechnic Institute, Worcester, MA. October 14 – 15, 2016.
100. SIAM Annul meeting (AN 17), Pittsburgh, PA, July 10 – 14, 2017.
101. Nonlocal School on Fractional Equations NSFE 2017, Department of Mathematics, Iowa State University, August 17 – 19, 2017.

Workshops:

102. 2006 CNA summer School, Probabilistic and Analytical Perspectives on Contemporary PDEs, Center for Nonlinear Analysis, Carnegie Mellon University, Pittsburgh, PA. May 29 - June 06, 2006.
103. 2009 CBMS Conference on Adaptive Finite Element Methods for Partial Differential Equations, Texas A&M University, College Station, TX. May 18-22, 2009.
104. Numerical Solutions of Partial Differential Equations: Novel Discretization Techniques, IMA. November 1 - 5, 2010.
105. 2011 CBMS Conference on Radial Basis Functions: Mathematical Developments and Applications, UMass Dartmouth. June 20 - 24, 2011.
106. 2011 UMassD workshop on Strong Stability Preserving Time Discretization Techniques. July 5 - 8, 2011.
107. Eigenvalues/singular values and fast PDE algorithms: acceleration, conditioning, and stability, Banff International Research Station, June 24 – 29, 2012.
108. MGHPCC seed funding workshop at Boston University, 2012/09.
109. Uncertainty Quantification, ICERM, Providence, RI. October 9 – 13, 2012.
110. The Fourth Annual Federal Research Update Webinar, October 29 – November 2, 2012.
111. Performance Analysis of Monte Carlo Methods, ICERM, Providence, RI. November 28 – 30, 2012.

112. Eigenvectors in graph theory and related problems in numerical linear algebra, ICERM, Providence, RI. May 5 - 9, 2014.

113. Robust Discretization and Fast Solvers for Computable Multi-Physics Models, ICERM, Providence, RI. May 12 -- 16, 2014.

114. Information-Based Complexity and Stochastic Computation, ICERM, Providence, RI. September 15-19, 2014.

115. Approximation, Integration, and Optimization, ICERM, Providence, RI. September 29- October 3, 2014.

116. IMA Special Workshop Structure-Preserving Discretizations of Partial Differential Equations, IMA, Minneapolis, MN. October 22 – 24, 2014.

117. Limit shapes, ICERM, Providence, RI. April 13 – 17, 2015.

118. Probabilistic Scientific Computing: Statistical inference approaches to numerical analysis and algorithm design, ICERM, Providence, RI. June 5 – 9, 2017.

119. Mathematical and Computational Aspects of Radar Imaging, ICERM, Providence, RI. October 16 – 20, 2017.

120. Optimal and Random Point Configurations, Semester Program on "Point Configurations in Geometry, Physics and Computer Science", ICERM, Providence, RI. February 26 – March 2, 2018.

121. Fractional PDEs: Theory, Algorithms and Applications, ICERM, Providence, RI. June 18 – 22, 2018.

122. Advances in PDEs: Theory, Computation and Application to CFD, ICERM, Providence, RI. Aug 20 - 24, 2018.

123. Scientific Machine Learning, ICERM, Providence, RI. Jan 28 - 30, 2019.

124. Preparing Successful NSF S-STEM Proposals, NSF-funded proposal-writing workshop, Rochester Institute of Technology Rochester, New York. November 8 – 10, 2019.

125. Mathematics of Reduced Order Models, Topical Workshop, ICERM Spring 2020 semester program on Model and dimension reduction in uncertain and dynamic systems. Providence, RI, February 17 - 21, 2020.

126. Computational Statistics and Data-Driven Models, Topical Workshop, ICERM Spring 2020 semester program on Model and dimension reduction in uncertain and dynamic systems. Providence, RI, April 20 - 24, 2020.

127. Workshop on Mathematical Machine Learning and Application, PSU, December 14-16, 2020.

128. Mathematical and Scientific Machine Learning, ICERM, Jun 5 - 9, 2023.

129. Numerical Analysis of Multiphysics Problems, ICERM Spring 2024 semester program on Numerical PDEs: Analysis, Algorithms, and Data Challenges. Providence, RI, Feb 12 - 16, 2024.

130. PDEs and Geometry: Numerical Aspects, ICERM Spring 2024 semester program on Numerical PDEs: Analysis, Algorithms, and Data Challenges. Providence, RI, March 11 - 15, 2024.

131. Nonlocality: Challenges in Modeling and Simulation, ICERM Spring 2024 semester program on Numerical PDEs: Analysis, Algorithms, and Data Challenges. Providence, RI, April 15 - 19, 2024.

Posters:

132. International Conference on Advances in Scientific Computing, Providence, RI. December 6 - 8, 2009.

133. Numerical Solutions of Partial Differential Equations: Novel Discretization Techniques, IMA. November 1 - 5, 2010.

134. IMA Special Workshop Structure-Preserving Discretizations of Partial Differential Equations, IMA, Minneapolis, MN. October 22 – 24, 2014.

135. Modern Advances in Computational and Applied Mathematics, Yale University, New Haven, CT. June 9 – 10, 2017.

136. Recent Advances and Challenges in Discontinuous Galerkin Methods and Related Approaches, Institute for Mathematics and its Applications, University of Minnesota Twin Cities, Minneapolis, MN June 29 – July 1, 2017.

137. 2022 AAAS S-STEM Symposium, Washington DC, September 29 – October 1, 2022.

138. PDEs and Geometry: Numerical Aspects, ICERM Spring 2024 semester program on Numerical PDEs: Analysis, Algorithms, and Data Challenges. Providence, RI, March 11 - 15, 2024.

Computer Skills:

- Computer literate in Windows and Linux. Professional experience in Latex, programming languages (C, C++, Matlab and Mathematica), object oriented programming, computer algorithms and data structures. Considerable knowledge in numerical linear algebra, numerical optimization.
- Familiarity with multiprecision, parallel computation; Fortran programming; software engineering.

Teaching:

UNIVERSITY OF MASSACHUSETTS, DARTMOUTH   (Sep. 2010 to May 2024)

- Probability, Quantitative Reasoning, Calculus I, Finite Mathematics, Pre-Calculus, Numerical Linear Algebra, Numerical analysis, Numerical Methods, (Pre-)dissertation research every semester (not listed).

Course	Enrollment	Units	Rating	Course	Enrollment	Units	Rating
Fall 2010				**Spring 2011**			
MTH-120-07 Quantitative Reasoning	31	3	**4.23/5**	**MTH-113-01** Calculus I	43	4	**4.49/5**
MTH-331/505-01 Probability	40	3	3.93/5	**MTH-331-01** Probability	33	3	**4.27/5**
Fall 2011				**Spring 2012**			
MTH-103-10 Finite Mathematics	34	3	**4.22/5**	**MTH-131-02** Pre-Calculus	39	3	4.20/5
MTH-331/505-01 Probability	33	3	**4.39/5**	**MTH-331-01** Probability	32	3	4.07/5
Fall 2012				**Spring 2013**			
Intermittent FMLA leave				**MTH-473/573** Num. Linear Alg.	14	3	4.34/5

Thesis courses only				**MTH-331-01** Probability	39	3	4.88/5
Fall 2013				**Spring 2014**			
MTH-331/505-01 Probability	40	3	**4.50/5**	**MTH-362/599 Numerical Analysis**	6	3	4.78/5
EAS 502 / MTH 361 Numerical Methods /Numerical Analysis	20	3	4.54/5				
Fall 2014				**Spring 2015**			
MTH-331/505-01 Probability	37	3	**4.61/5**	**MTH-331** Probability	39	3	**4.48/5**
MTH-331-02 Probability	28	3	**4.79/5**	**MTH-362/599 Numerical Analysis**	8	3	**4.70/5**
Fall 2015				**Spring 2016**			
MTH-331/505-01 Probability	42	3	**4.6/5**	**MTH-331** Probability	41	3	**4.27/5**
EAS 502 / MTH 361 Numerical Methods /Numerical Analysis	17	3	**4.67/5**	**MTH-362/599 Numerical Analysis**	8	3	**4.71/5**
Fall 2016				**Spring 2017**			
MTH-331/505 – 01 Probability	39	3	**4.24/5**	Limited FMLA: Thesis courses only			
MTH-331 – 02 Probability	38	3	**4.27/5**				
Fall 2017				**Spring 2018**			
On Sabbatical No teaching							
Fall 2018				**Spring 2019**			
MTH-331 – 02 Probability	16	3	4.5/5	**MTH-353/DSC 301 Applied Linear Algebra**	**20**	3	5/5

MTH 361 Numerical Analysis	13	3	4.27 / 5	MTH 362 Numerical Analysis	3	3	4.3 / 5
Fall 2019				**Spring 2020**			
MTH-331 Probability	23	3	4.49 / 5	MTH 362 Numerical Analysis	9	3	4.72 / 5
MTH 361 Numerical Analysis	17	3	4.6 / 5				
Fall 2020				**Spring 2021**			
MTH-331 Probability	33	3	4.07 / 5	MTH 362 Numerical Analysis II	6	3	4.42 / 5
MTH 361 Numerical Analysis I	17	3	4.14 / 5				
Fall 2021				**Spring 2022**			
MTH-331 Probability	32	3	4.06 / 5	EAS 502 Numerical Methods	13	3	4.13 / 5
EAS 502/MTH 499 Numerical Methods	15	3	4.22 / 5				
Fall 2022				**Spring 2023**			
MTH 361 Numerical Analysis I	5	3	3.78 / 5	EAS 502 Numerical Methods	14	3	4.04 / 5
Fall 2023				**Spring 2024**			
MTH 361 Numerical Analysis I	6	3	4.50 / 5	EAS 502 Numerical Methods	24	3	4.00 / 5

UNIVERSITY OF MINNESOTA   (September 2002 to July 2007)

- Recitation Instructor for Precalculus II, Calculus II, College Algebra and Probability.

Select services (2010/08 – 2024/05):

TO THE DEPARTMENT

- Website contributor and moderator (2010 -- 2024).
- Computational science seminar series (2011 – 2013, 2015 -- 2017).
- SIAM student chapter advisor (2011 -- 2024).
- Open house participating faculty: Spring 2012, Spring 2014, Spring 2015.
- Tenure track search and screen committee: Spring 2012 (Chair), Spring 2014, Spring 2016, Spring 2018.

- Library liaison (2014 -- 2019).
- Co-organizer of the department's response to the Provost's departmental challenges, Spring 2013.
- Alumni outreach strengthening the systematic tracking of mathematics alumni.
- Academic Quality Assessment and Development (AQAD) program review: 2016 – 2017 (Co-Chair).
- Founding organizer of the AfterMath Symposium at UMass Dartmouth (AMS@UMassD) (Spring 2016 – Spring 2017).
- Tenure and promotion standards committee, Department of Mathematics. Fall 2016.
- Department Faculty Evaluation Committee (FEC) (2016 -- 2024).
- Initiator and facilitator of the department's first-ever flat screen for marketing, 2017.
- Academic Quality Assessment and Development (AQAD) program review: 2023 – 2024 (Co-Chair).

TO THE COLLEGE
- Curriculum Committee, Fall 2011.
- CAS representative for the reception for the convocation in Fall 2012**.**
- CAS strategic planning committee for UMassDTRANSFORM2020, 2013 – 2014.
- Data science program external review, participating faculty, spring 2014.
- Alumni outreach leading to two appointments on the first-ever college advisory council.
- Center for Scientific Computing and Visualization Research website administrator (2011 - 2016).
- Science Academic Council (2018 - 2024).
- Data Science steering committee (2019 – 2020).
- Admissions and Academic Curriculum Committee, Engineering and Applied Science PhD program (2019 - 2022).
- Co-Graduate Program Director (together with Mehdi Raessi, then Firas Khatib) for the Engineering and Applied Science PhD program, Fall 2020 – Summer 2022.
- Graduate Program Director for the Engineering and Applied Science PhD program, Fall 2022.
- Academic Quality Assessment and Development (AQAD) program review of the Data Science BS & MS programs: 2021 – 2022.
- Co-director (together Vijaya Chalivendra) for the Engineering and Applied Science PhD program, 2023/01 – 2024/06.
- LARTS renovation project steering committee, 2023 – 2025.

TO THE UNIVERSITY
- Math Dept representative in the UMass Dartmouth Biomedical Engineering PhD committee (2010 -- 2016).
- University Curriculum Committee (2011 -- 2013).
- UMass Darmouth Faculty Senate (2011 -- 2017).
- Provost's task force member for collaboration between UMassD and the SouthCoast Health Systems.
- A judge for the 3-minute thesis competition for graduate studies in Spring 2013.
- OUR 3-minute thesis competition workshop, panel member, spring 2014.
- Session moderator, OFD grant seekers' workshop. Spring 2014.
- OUR advisory board member, 2014 – 2019.
- Reader, CAS graduate commencement ceremony, Spring 2017.
- Marshal, CAS undergraduate commencement ceremony, Spring 2017.

- Multidisciplinary seed funding program, Grant reviewer, Fall 2017.
- UMassD graduate 3-minute thesis competition, Judge, Spring 2019.
- UMassD RSI (Research, Scholarship, and Innovation) committee member, 2019 – 2021.
- UMassD Pandemic Emergency Response Team (PERT), Graduate and Law committee, Summer 2020.
- UMassD ACCOMPLISH STEM scholarship program Director / Co-Director, 2020 - .
- Master of Ceremonies for the 3-minute thesis competition for graduate studies, Spring 2022, 2023.

TO THE (PROFESSIONAL AND SOCIAL) COMMUNITY
- UMassD Service Learning Fellow, 2014 – 2016.
- External evaluator for the mathematics program review, Salve Regina University, 2019 – 2024, conducted in Spring 2019.
- Superintendent search and screen committee, Sharon Public School (SPS), December 2016.
- Board of director and Secretary General, Sharon Chinese Association Inc., 2017 – 2018.
- School Council, Sharon East Elementary School, 2017 – 2020.
- Superintendent advisory council, Sharon Public Schools, 2018.
- Board member, Sharon Education Foundation (SEF), 2019 - 2021.
- Board of trustees, The Sage School. 2023 – 2026.