

## CURRICULUM VITAE

### **Nguyen-Truc-Dao Nguyen**

Department of Mathematics and Statistics  
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## EDUCATION

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June 2021	Department of Mathematics, Wayne State University
Ph.D. in Applied Mathematics	Mathematics
August 2018	Department of Mathematics, Wayne State University
M.A. in Mathematical Statistics	Mathematics
July 2016	Institute of Mathematics, Vietnam Academy of
Le Master de Mathématiques (M1)	Science and Technology, Hanoi, Vietnam
International Master Program in Mathematics	Mathematics
June 2015	Department of Mathematics and Statistics
B.S. in Mathematics and Education (Valedictorian)	Quy Nhon University, Vietnam
	Mathematics and Education

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## ACADEMIC POSITIONS HELD

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August 2023 – Present	Tenure Track Assistant Professor
Department of Mathematics and Statistics	Optimization, Data Science, Optimal Control
San Diego State University, San Diego, USA	
August 2021 – July 2023	Non-Tenure Track Assistant Professor
Department of Mathematics	Optimization, Data Science, Optimal Control
University of Michigan, Ann Arbor, USA	
August 2016 – June 2021	Graduate Research and Teaching Assistant
Department of Mathematics	Mathematics
Wayne State University, USA	
August 2015 – July 2016	Researcher
Institute of Mathematics	Mathematics

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## PROFESSIONAL GROWTH

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### REFEREED JOURNAL ARTICLES

**Authorship in all publications is listed alphabetically.**

1. 2026 – Harbir Antil, Rafael Arndt, Boris Mordukhovich, **D. Nguyen**, Carlos N. Rautenberg, Optimal Control of a Quasi-Variational Sweeping Process, *Mathematical Control and Related Fields*, Vol. 16, pp. 132–156. DOI: 10.3934/mcrf.2025010. Ranking: Q1; Impact Factor: ~1.2  
**Contribution:** I co-authored the theoretical development, focusing on well-posedness proofs and the necessary optimality conditions.
2. 2025 – B. S. Mordukhovich, **D. Nguyen**, T. Nguyen, N. Ortiz-Robinson and V. Rios, Well-Posedness and Stability of Discrete Approximations for Controlled Sweeping Processes with Time Delay, *Journal of Optimization Theory and Applications*, 206 (70). Ranking: Q1 (JOTA); Impact Factor: ~1.8  
**Contribution:** I developed the discrete approximation framework, coordinated stability proofs, and validated convergence results.
3. 2024 – G. Colombo, B. S. Mordukhovich, **D. Nguyen**, T. Nguyen, N. Ortiz-Robinson, Optimal Control of Perturbed Sweeping Process with Applications to General Robotic Models, *Journal of Optimization Theory and Applications*, to appear, [arXiv:2405.08986]. Ranking: Q1; Impact Factor: ~1.8  
**Contribution:** I co-authored optimality conditions, and connected the results to robotic system modeling.
4. 2024 – B. S. Mordukhovich, **D. Nguyen**, T. Nguyen, Optimal Control of Sweeping Processes in Unmanned Surface Vehicles and Nanoparticle Modeling, *Optimization* (2024), 1–33. Ranking: Q1 in Optimization/Applied Math; Impact Factor: ~1.8  
**Contribution:** I led the application to nanoparticle transport models, co-authored the derivation of necessary conditions, and finalized the analysis for marine vehicles.
5. 2024 – G. Colombo, B. S. Mordukhovich, **D. Nguyen**, T. Nguyen, Discrete Approximations and Optimality Conditions for Controlled Free-Time Sweeping Processes, *Applied Mathematics & Optimization* 89 (2024), Article 40. Ranking: Q1 in Applied Mathematics; Impact Factor: ~1.9  
**Contribution:** I co-developed the proof of discrete approximation results, including optimality conditions, and validated robustness for free-time formulations.
6. 2021 – T. H. Cao, B. S. Mordukhovich, **D. Nguyen**, T. Nguyen, Applications of Controlled Sweeping Processes to Nonlinear Crowd Motion Models with Obstacles, *IEEE Control Systems Letters*, 2021 June; 6:740-745. Ranking: Q1; Acceptance Rate: 20%; Impact Factor: ~2.42  
**Contribution:** I developed parts of the mathematical analysis and helped link results to crowd modeling scenarios.
7. 2021 – T. H. Cao, N. T. Khalil, B. S. Mordukhovich, **D. Nguyen**, F. L. Pereira, Crowd Model Paradigm Modeled by Bilevel Optimal Control, *IEEE Control Systems Letters*, 2021 May; 6:395-390. Ranking: Q1; Impact Factor: ~2.42  
**Contribution:** I worked on bilevel optimal control analysis and proof strategies for crowd flow systems.
8. 2021 – T. H. Cao, N. T. Khalil, B. S. Mordukhovich, T. Nguyen, **D. Nguyen**, F. L. Pereira, Optimization of Controlled Free-Time Sweeping Processes with Applications to Marine Surface Vehicle Modeling, *IEEE Control Systems Letters*, June 2021, 6:782-787. Ranking: Q1; Impact Factor: ~2.42

**Contribution:** I co-developed the free-time formulation and co-authored proofs applying sweeping dynamics to marine vehicles.

9. 2021 – B. S. Mordukhovich, **D. Nguyen**, Discrete Approximations and Optimal Control of Nonsmooth Perturbed Sweeping Processes, *Journal of Convex Analysis* 28 (2021), No. 2. [arXiv:2004.13884] Ranking: Q1 in Mathematics; Acceptance Rate: ~45%; Impact Factor: ~1.3  
**Contribution:** I led the approximation analysis and collaborated on deriving optimality conditions for nonsmooth dynamics.
10. 2021 – T. H. Cao, G. Colombo, B. S. Mordukhovich, **D. Nguyen**, Optimization of Fully Controlled Sweeping Processes, *Journal of Differential Equations*. [arXiv:2012.11722] Ranking: Q1 in PDE/Differential Equations; Acceptance Rate: 22%; Impact Factor: ~2.3  
**Contribution:** I contributed to theoretical development, focusing on fully controlled sweeping models and their optimality conditions.
11. 2020 – T. H. Cao, G. Colombo, B. S. Mordukhovich, **D. Nguyen**, Optimization and Discrete Approximation of Sweeping Processes with Controlled Moving Sets and Perturbations, *Journal of Differential Equations* 274 (2020), 461-509. Ranking: Q1 in Applied Mathematics/Differential Equations; Acceptance Rate: 22%; Impact Factor: ~2.3  
**Contribution:** I co-authored the approximation scheme and helped establish convergence and stability results.
12. 2020 – G. Colombo, B. S. Mordukhovich, **D. Nguyen**, Optimization of a Perturbed Sweeping Process by Discontinuous Controls, *SIAM Journal on Control and Optimization* 58 (2020), 2678-2709. Ranking: Q1 in Control & Optimization; Acceptance Rate: 23%; Impact Factor: ~2.4  
**Contribution:** I collaborated on derivation of discontinuous control strategies and necessary optimality analysis.
13. 2019 – G. Colombo, B. S. Mordukhovich, **D. Nguyen**, Optimal Control of Sweeping Processes in Robotics and Traffic Flow Models, *Journal of Optimization Theory and Applications* 182 (2019), 439-472. Ranking: Q1 in Control & Optimization; Acceptance Rate: 25%; Impact Factor: ~1.8  
**Contribution:** I led the traffic flow modeling aspects and co-authored the optimal control framework, and all calculations in applications.

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## REFEREED PROCEEDINGS

1. 2023 – Lewei Zhao, Sophie Wuyckens, Juntao You, Gang Liu, Xiliang Lu, Boris Mordukhovich, **D. Nguyen**, Xuanfeng Ding, Spot Drilling Time Optimization for a Cyclotron-Based Proton Therapy System, 61st PTCOG Conference, Madrid, Spain.

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## UNPUBLISHED, REFEREED PAPERS BEFORE PROFESSIONAL CONFERENCES

1. 2025 – T. Cao, B. S. Mordukhovich, **D. Nguyen**, T. Nguyen and N. Thieu, Optimal Control of Nonconvex Sweeping Processes with Variable Time via Finite-Difference Approximations, submitted. [arXiv:2503.00667] Ranking: Q1  
**Contribution:** I co-led the theoretical formulation, developed finite-difference approximation schemes, and analyzed numerical properties.
2. 2025 – Edward Lester, **D. Nguyen**, Stochastic Gradient Calibration of Neural Network–Driven Interacting Particle Systems, submitted to *Journal of Optimization Theory and Applications*. Ranking: Q1

**Contribution:** I supervised the project, co-designed the stochastic gradient framework, and guided the analysis; Lester implemented experiments.

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## TEXTBOOKS

1. Applied Linear Regression, **D. Nguyen**, January 2024.

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## PUBLICATIONS IN PROCESS

### Books:

1. Foundations of Machine Learning, **D. Nguyen**, January 2025, Cognella Academic Publishing.

### Journal Articles:

1. Yen Dang, **D. Nguyen**, Optimization for controlled sweeping processes and applications, in preparation.
2. Tan H. Cao, Boris S. Mordukhovich, **D. Nguyen**, Nathalie Khalil, Optimization and Finite Difference Approximations of a Perturbed Sweeping Process with Variable Time, in preparation.
3. Tan H. Cao, **D. Nguyen**, On an Optimal Bilevel Sweeping Control Problem, in preparation.
4. Tan Cao, **D. Nguyen**, Emilio Vilches, Optimal Control of ODEs System with Hysteresis via Discrete Approximations, in preparation.
5. Boris S. Mordukhovich, **D. Nguyen**, Optimality Conditions for Sweeping Processes in Incomplete Functional Spaces, in preparation.
6. **D. Nguyen**, Optimization for Sweeping Processes and Applications in Reinforcement Learning, in preparation.

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## SCHOLARLY AWARDS

- Assigned Time for Research, Scholarship, and Creative Activities (AY 25-26) award for the project: "Optimization Research, Data Science Curriculum Development, and External Grant Applications for Student Support."
- NSF conference grant \$25,000, 2023-2025.
- Research of this author was partly supported by the USA National Science Foundation under grant DMS--1808978, DMS--1743826, DMS--1512846, the USA Air Force Office of Scientific Research grant 15RT0462, and the EDES grant number REDI170200.
- AMS Simons Travel Grant, 07/2022--07/2024 (\$5,000).
- Early-career AMS-NSF-Simons-ICM Travel Grant (\$3,500).
- Travel Award from the University of Michigan, 2021--2022.
- Thomas C. Rumble University Graduate Fellowship, Wayne State University, 2020--2021.
- SIAM Student Travel Award (\$2,500), 2020-2021.
- Paul Catlin, Ph.D. Endowed Memorial Scholarship Award in Recognition of Outstanding Achievement

in the Ph.D. Program, Department of Mathematics, Wayne State University, 2019--2020

- Graduate Student Travel Award Joint Mathematics Meeting, American Mathematical Society, 2019--2020.
- SIAM Student Travel Award, to attend The Second Joint SIAM/CAIMS Annual Meeting (AN20), Toronto, Ontario, Canada, 2019--2020.
- Nominated (by Department of Mathematics) for the 2020 Garrett T. Heberlein Endowed Award for Excellence in Teaching for Graduate Students, Wayne State University, 2019--2020.
- Travel Award for the East Coast Optimization Meeting 2020.
- Travel Award by National Science Foundation, Grant No. DMS-1512846, 2019--2020.
- Travel Award by REDES grant number REDI170200, for School and Workshop Control of State-Constrained Dynamical Systems, Chile, 2019--2020.
- Graduate Student Professional Travel Awards, Wayne State University, 2019--2020.
- The M.F. Janowitz Scholarship in Recognition of Outstanding Achievement in the Ph.D. Program, Department of Mathematics, Wayne State University, 2018--2019.
- The Paul Weiss Award in Recognition for Outstanding Achievement in the Masters Program, Wayne State University, 2018--2019.
- Travel Award by the Weierstrass Institute for Applied Analysis and Stochastics (WIAS) Berlin for ICCOPT 2019, Germany.
- SIAM Student Travel Award by the U.S. National Science Foundation (NSF) to attend the 9th International Congress on Industrial and Applied Mathematics (ICIAM 2019), July 15-19, 2019 in Valencia, Spain (\$2,500).
- SIAM Student Travel Award by the National Science Foundation (NSF) to attend the 2019 SIAM Conference on Control and Its Applications in China (\$2,500).
- Graduate Research Fellowship, Wayne State University, 2018--2019.
- Travel Award by MCAIM and SIAM for the 2019 SIAM Great Lakes Section Meeting.
- Graduate Student Professional Travel Awards, Wayne State University, 2018--2019.
- Maurice J. Zelonka Endowed Scholarship in Recognition of Outstanding Achievement in the Ph.D. Program, Department of Mathematics, Wayne State University, 2017--2018.
- Paul Catlin Endowed Mathematics Scholarship in Recognition of Outstanding Achievement in the Ph.D. Program, Department of Mathematics, Wayne State University, 2017--2018.
- Second Place, Graduate and Postdoctoral Research Symposium, Tuesday, March 6, 2018, Wayne State University.
- Travel Awards, National Science Foundation (NSF), DMS Award 1743826, 2017--2018.
- Travel Awards, Air Force Office of Scientific Research, Grant No. 15RT0462, 2017--2018.
- Graduate Student Professional Travel Awards, Wayne State University, 2017--2018.
- Graduate Student Professional Travel Awards, Wayne State University, 2016--2017.
- Travel support, The Seventh Ohio River Analysis Meeting, University of Cincinnati, Cincinnati, Ohio, March 25-26, 2017.
- Graduate Teaching Assistant, Wayne State University, 2016--2017.
- Award for excellent mathematical students, National Program for the Development of Mathematics in 2014-2015.
- Award for the most excellent student graduating in Mathematics Teaching Education and Award of ranking the 1st of Department of Mathematics, Quy Nhon University, Vietnam, June 2015.
- Government Scholarships for outstanding undergraduate student, 2011-2012, 2012-2013, 2013-2014,
- Certificate completion of Student Scientific Research Project, University level Academic year

2013-2014.

- Certificate for the 2013 National Mathematical Olympiad in Algebra, for undergraduate students held in Duy Tan University, Vietnam, 2014-2015.
- Top 5 excellent students, at National Summer School of Mathematics for Young Students, held by Institute of Mathematics-Vietnam Academy of Science and Technology (VAST) in 2013, 2014.

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## **FUNDED RESEARCH GRANTS<sup>1</sup>**

1. **\$25,000 – NSF Conference Grant: Conference 2023 Midwest Optimization Meeting**, Co-PI, Awarded, NSF (Highly Competitive; acceptance rate not publicly stated), Start Date: 03/10/2023 – End Date: 08/16/2023.

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## **GRANTS SUBMITTED**

1. \$405,531 – NSF Applied Mathematics Collaborative Proposal Submission with Professor Trang Nguyen at South Dakota State University, Optimal Control of Second-Order Sweeping Processes and Applications, PI, NSF, Received: 11/17/2025, Pending.
2. \$406,507 – Optimal Control of Second-Order Sweeping Processes and Applications, PI, Declined, NSF, Received: 11/15/2024 – Status Date: 05/12/2025.
3. \$458,326 – CAREER: Optimization of Nonsmooth Dynamical Systems and Its Applications, PI, Declined, NSF, Received: 07/24/2024 – Status Date: 01/22/2025.
4. \$249,999 – LEAPS-MPS: Optimization Method for the Proton Therapy System, PI, Declined, NSF, Received: 01/25/2024 – Status Date: 07/19/2024.
5. \$398,441 – Optimal Control of Second-Order Sweeping Processes and Applications, PI, Declined, NSF, Received: 11/15/2023 – Status Date: 05/15/2024.
6. \$605,735 – Optimization for Controlled Random and Stochastic Sweeping Processes, PI, Declined, NSF, Received: 09/19/2023 – Status Date: 03/17/2024.
7. \$213,349 – Optimal Control for Random and Stochastic Sweeping Processes, PI, Declined, NSF, Received: 12/12/2022 – Status Date: 05/14/2023.
8. \$268,763 – Discrete Approximation of Second-Order Sweeping Processes with Controlled Perturbations, PI, Declined, NSF, Received: 11/10/2022 – Status Date: 05/11/2023.
9. \$150,000 – Postdoctoral Research Fellowship, PI, Declined, NSF, Received: 10/19/2022 – Status Date: 03/06/2023.
10. \$295,463 – Optimal Control for Random and Stochastic Sweeping Processes (Agency Tracking Number 2205693), PI, Declined, NSF, Submitted: 11/12/2021 – Status Date: 05/15/2022.

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## **PARTICIPATION IN PROFESSIONAL ASSOCIATIONS**

1. Member, Society for Industrial and Applied Mathematics (SIAM).
2. Member, American Mathematical Society (AMS).
3. Member, Mathematical Optimization Society (MOS).
4. Member, IEEE Control Systems Society (CSS).

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<sup>1</sup>The UPTRP requests that candidates provide clear information about their role and effort percentage on each grant.

## TALKS

1. 2025 Midwest Optimization Meeting - University of North Dakota (Oct 31 - Nov 3, 2025)
2. Seminar - South Dakota State University (Oct 25- 30, 2025)
3. SIAM TX-LA 2025 Conference - UT Austin (Sep 26 - 28, 2025)
4. Seminar - UT Arlington (Sep 11 - 25, 2025)
5. Seminar on Optimization and Data Science at the Department of Mathematics at Ohio State University
6. University of Science, VNU-HCM, Time: 09:00 – 11:00, Thursday, December 12, 2024.
7. Can Tho University, Time: 10:00 – 11:30, Monday, December 16, 2024.
8. Quy Nhon University, Time: 14:00 – 16:00, Saturday, December 21, 2024.
9. The 3rd Vietnam – Korea Joint Workshop on Selected Topics in Mathematics, Time: January 6–9, 2025, Venue: Hanoi.
10. International Joint Meetings, co-organized by the Unione Matematica Italiana (UMI) and the American Mathematical Society (AMS), after 22 years, with more than 1500 participants, Palermo, Italy.
11. Visit my collaborators at University of Paris-Saclay.
12. National University of Singapore (Jun 13-17, 2024)
13. University of Texas, Arlington & Austin (Nov 25-28, 2023).
14. Midwest Optimization Meeting 2023 - University of Michigan, Ann Arbor (Oct 21-22, 2023).
15. Oct 11, 2023 – Invited Talk at the University of California San Diego, Optimization and Data Science Seminar (in person).
16. Sep 15, 2023 – Invited Talk at the Computational Science Research Center, San Diego State University.
17. Jan 16-20, 2023 – The Latin American Workshop on Optimization and Control, Chile (Plenary Speaker).
18. Jan 24-26, 2023 – Invited Talk, Department of Mathematics, Southern Methodist University, Dallas, TX.
19. Feb 08-11, 2023 – Invited Talk, Department of Mathematics and Statistics, San Diego State University, San Diego, CA.
20. Feb 21-24, 2023 – Invited Talk, Department of Mathematics, Western Washington University, Bellingham, WA.
21. May 31–Jun 3, 2023 – SIAM Conference on Optimization (OP23), Seattle, Washington, U.S. (Invited Talk).
22. Jan 16-20, 2023 – The Latin American Workshop on Optimization and Control, Chile (Plenary Speaker).
23. Oct 28, 2022 – Midwest Optimization Meeting, Canada (Invited Talk).
24. Dec 13-17, 2021 – The 60th IEEE Conference on Decision and Control, Austin, Texas, USA.
25. Oct 29-30, 2021 – The 23rd Midwest Optimization Meeting, Grand Valley State University, Grand Rapids MI.
26. Aug 25-29, 2021 – New Postdoc Mini-Symposium, University of Michigan, Invited Talk.
27. Jul 2021 – Department of Mathematics, National University of Singapore, Singapore (Invited talk).
28. Jun 2021 – The 13th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Atlanta (Invited talk).
29. Jul 20–23, 2021 – SIAM Conference on Optimization (OP21), Spokane, Washington, U.S.
30. Apr 4, 2021 – SAMPLE seminar series (Virtual), Applied Mathematics Department, University of California, Merced (Invited talk).
31. Apr 1–2, 2021 – East Coast Optimization Meeting (Virtual), Center for Mathematics and Artificial Intelligence, George Mason University, Fairfax, Virginia (USA).
32. Jan 6–9, 2021 – AMS Special Sessions at the JMM (Virtual): Variational Analysis and Optimization, Washington Convention Center (Invited talk).
33. May–Aug, 2020 – Online Conferences: Machine Learning and Control Theory, CMAI Colloquium, Virtual Conference on Reinforcement Learning for Real Life, 4th International conference on

Modelling, Computation and Optimization in Information Systems and Management Sciences (MCO 2021).

34. Jul 6–10, 2020 – The Second Joint SIAM/CAIMS Annual Meeting (AN20), Toronto, Ontario, Canada.
35. Apr 2–3, 2020 – East Coast Optimization Meeting 2020, Department of Mathematical Sciences, George Mason University, Fairfax, Virginia (Invited talk).
36. Mar 3, 2020 – The 10th Annual Graduate and Postdoctoral Research Symposium: Poster Judging, Wayne State University, Michigan.
37. Jan 14–19, 2020 – Joint Mathematics Meetings, Colorado Convention Center, Denver, Colorado.
38. Oct 11–12, 2019 – The 21st Midwest Optimization Meeting, Northern Illinois University, DeKalb, Illinois (Invited talk).
39. Sep 24–27, 2019 – Control of State-Constrained Dynamical Systems: School and Workshop, Valparaíso, Chile (Invited talk).
40. Jul 15–19, 2019 – The 9th International Congress on Industrial and Applied Mathematics (ICIAM 2019), Universitat de València, Valencia, Spain (Invited talk).
41. Aug 3–8, 2019 – ICCOPT 2019, the Sixth International Conference on Continuous Optimization, Technical University of Berlin, Berlin, Germany.
42. Jul 2019 – Dipartimento di Matematica, Università degli Studi di Padova, Italy (Invited talk).
43. Jun 22–25, 2019 – Department of Mathematics, Sun Yat-Sen University, Guangzhou, China (Invited talk).
44. Jun 19–21, 2019 – SIAM Conference on Control and Its Applications (CT19), Chengdu, China.
45. Jun 10–13, 2019 – Vietnam-USA Joint Mathematical Meeting, Quy Nhon, Vietnam (Invited talk).
46. Apr 27, 2019 – SIAM Great Lakes Section Annual Meeting (GLSIAM 2019), University of Michigan.
47. Apr 12, 2019 – Conference on Stochastic Processes and Applications, Wayne State University (Invited talk).
48. Mar 5, 2019 – Graduate and Postdoctoral Research Symposium, Wayne State University.
49. Oct 18, 2018 – The Chuan-Pu Lee, Ph.D. Endowed Graduate Student Research Presentation Day, Wayne State University.
50. Oct 12–13, 2018 – The 2018 Midwest Optimization Meeting, Miami University, Oxford, Ohio (Invited talk).
51. Apr 21, 2018 – 2018 SIAM Great Lakes Section Annual Meeting (GLSIAM 2018), Wayne State University (Invited talk).
52. Apr 14–15, 2018 – AMS Spring Western Sectional Meeting, Portland State University, Portland, Oregon (Invited talk).
53. Apr 24, 2018 – PDE Seminar, Department of Mathematics, Wayne State University (Invited talk).
54. Mar 6, 2018 – Graduate and Postdoctoral Research Symposium, Wayne State University (Invited talk).
55. Dec 19–21, 2017 – International Workshop on Variational Analysis and Optimization Theory, Hanoi, Vietnam (Invited talk).
56. Oct 21, 2017 – The 19th Midwest Optimization Meeting, Oakland University, Rochester, Michigan (Invited talk).

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## SHORT-TERM VISITS

1. Visit Stanford University April 7-10, 2025, visiting and collaborating with my colleague, Lewei Zhao.
2. 06/08 - 06/13: Trang Nguyen & Boris Mordukhovich, Wayne State University.

3. 06/13 - 06/17: Tuyen Tran, Loyola University.
4. 06/17 - 06/19: Zhong-Ping Jiang, New York University.
5. 06/19 - 06/22: Harbir Antil & Carlos N. Rautenberg, George Mason University.
6. Dec 2022 – Department of Mathematics, Michigan State University. Host: Professor Vera Zeidan.
5. Jun 2021 – Department of Mathematics, National University of Singapore. Host: Professor Toh Kim Chuan.
6. Jul 2019 – Dipartimento di Matematica, Università degli Studi di Padova, Italy. Host: Professor Giovanni Colombo. Financial support: Professor Boris Mordukhovich.
7. Jun 2019 – Sun Yat-Sen University, Guangzhou, China. Host: Professor Qinghui Zhang.
8. Aug 2019 – Weierstrass Institute for Applied Analysis and Stochastics (WIAS), Berlin, Germany (Summer School “Optimization and Machine Learning”).
9. Jul 2018 – Jackson State University, Jackson, MS, NSF DMS Award 1743826 (2018 NSF-CBMS: Computational Methods in Optimal Control).
10. Oct 2015 – Autumn School “Theoretical Computer Science”, Institute of Mathematics, Vietnam Academy of Science and Technology (VAST).
11. Jul 2015 – Summer School “Mathematical Statistics Tools: Theory and Practice”, Vietnam Institute for Advanced Study in Mathematics.
12. Jul 2013 & Jul 2014 – National Summer School of Mathematics for Young Students, Institute of Mathematics, VAST, Hanoi, Vietnam.

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## CERTIFICATES

1. Dec 2018 – Game Theory by Stanford University & The University of British Columbia.
2. Jan 2019 – Machine Learning by Stanford University.
3. Mar 2019 – Applied Data Science with Python Specialization, University of Michigan.
4. Mar 2019 – Introduction to Data Science in Python, University of Michigan.
5. Jun 2020 – Reinforcement Learning, University of Alberta.

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## TEACHING EFFECTIVENESS

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Dates	Description
2023–Present	<p>List of students supervised and currently supervising:</p> <ul style="list-style-type: none"><li>- Edward Lester (Master's, SDSU) – Thesis leading to paper submitted to JOTA: “Stochastic Gradient Descent for Traffic and Pedestrian Models via Neural Network and Parameter Identification”.</li><li>- Yen Dang (Master's project, SDSU) – Optimization for Controlled Perturbed Sweeping Processes and Applications.</li><li>- Mentor undergraduate students (SDSU): Sristi Fulsunge, Rhea Shenoy, Monica Lester, Ethan Gerez, Lillian Snyder, Mariel Estrada, Moises Varela, Palash Vijaykumar Suryawanshi, Jennie Nguyen. One student was awarded a Ph.D. scholarship at University of Texas at Arlington.</li><li>- Served on the Master's Thesis Defense Committees: Cameron Deschenes (2025), Samuel Persaud (2025), Aliha Shareef (2024).</li><li>- PhD Students supervised: Yen Dang (SDSU), Chinmaya Kausik and Yuzhou Mao (UMich).</li><li>- REU Student: Zhongqi Ma (UMich) – pending paper on incorporating domain knowledge in neural networks.</li><li>- Log(M) Students at UMich: Tianyi Cheng, Matthew Nomura, Chang Wang (Fall 2021); Cruise Song, Elham Islam, Pranjal Sharma, Yurong Chen (Fall 2022).</li><li>- I also mentored 33 Vietnamese students who are working on research remotely.</li></ul>
2019–2022	<p>Teaching Awards:</p> <ul style="list-style-type: none"><li>- Nominated by Department of Mathematics for the 2020 Garrett T. Heberlein Endowed Award for Excellence in Teaching for Graduate Students (Wayne State University).</li><li>- Thomas C. Rumble University Graduate Fellowship (WSU).</li><li>- Other travel awards (AMS, SIAM, NSF) recognizing teaching and professional development.</li></ul>

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## COURSES TAUGHT

Course #	Course Name	Level (i.e., upper, lower, grad)	Modality (i.e., online, in-person, hybrid)	Co-Taught?
MATH 330	Advanced Calculus I	Upper	In-Person	No
MATH 693B	Advanced Computational PDEs	Graduate	In-Person	No
MATH 630	Applied Real Analysis	Graduate	In-Person	No
MATH 693B	Advanced Computational PDEs	Graduate	In-Person	No
MATH 330	Advanced Calculus I	Upper	In-Person	No

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## **SERVICE**

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### **Service for the Department**

1. 2016–2021 Activities Committee, Department of Mathematics, Wayne State University
2. 2016–2021 Graduate Employees’ Organizing Committee, Wayne State University
3. 2016–2019 Math Computer Library, Math Resource Center

### **Service for the University**

1. 2018–2020 Judge for doctoral section at Graduate and Postdoctoral Research Symposium, Wayne State University
2. 2024 Panelist, New Faculty Orientation, San Diego State University (August 2024)
3. 2023-2024 Judge for the Computational Science Research Center’s annual ACSESS event, San Diego State University, March 2023 and 2024.

### **Service for the Profession**

1. 2020–Present Editorial Board Member, *Artificial Intelligence Advances*
2. 2016–Present Reviewer for SIAM Journal on Control and Optimization, Journal of Differential Equations, Journal of Optimization Theory and Applications, Set-Valued and Variational Analysis, Applicable Analysis, Optimization Letters
3. 2018–2020 Chair of sessions at SIAM and JMM meetings

### **Service for the Community**

1. 2021–2023 Michigan Math Circle, University of Michigan
2. 2021–2023 Math Corps, University of Michigan
3. 2021–2023 Michigan Math and Science Scholars (MMSS), University of Michigan
4. 2021–2023 Math Teacher Circles, University of Michigan
5. 2021–2023 Math Club, University of Michigan
6. 2021–2023 Association for Women in Mathematics, University of Michigan