

DAT BA TRAN | Curriculum Vitae

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SUMMARY

PH. D. CANDIDATE IN APPLIED MATHEMATICS AT WAYNE STATE UNIVERSITY, DETROIT, MI, USA

Advisor 1: Prof. Boris Mordukhovich, Wayne State University, aa1086@wayne.edu

Advisor 2: Dr. Khanh Pham, HCMC University of Education, khanhpd@hcmue.edu.vn

EMPLOYMENT

WAYNE STATE UNIVERSITY

Graduate Teaching and Research Assistant

9/2020 - now

EDUCATION

WAYNE STATE UNIVERSITY

Ph.D. in Applied Mathematics

9/2020 - now

Detroit, Michigan, USA

WAYNE STATE UNIVERSITY

M.A. in Applied Mathematics

9/2020 - 12/2022

Detroit, Michigan, USA

HO CHI MINH CITY UNIVERSITY OF EDUCATION

Mathematics Teacher Education

8/2015 - 6/2019

Ho Chi Minh City, VN

PUBLICATIONS

1. (with P. D. Khanh, B. S. Mordukhovich, and V. T. Phat) Generalized damped Newton algorithms in nonsmooth optimization via second-order subdifferentials, J. Global Optim. 86 (1) 93-122 (2023)
2. (with P. D. Khanh, B. S. Mordukhovich, and V. T. Phat) Globally convergent coderivative-based generalized Newton methods in nonsmooth optimization, Math. Program. Ser. A 205 (1), 373-429 (2023)
3. (with P. D. Khanh, and B. S. Mordukhovich) Inexact Reduced Gradient Methods in Nonconvex Optimization, J. Optim. Theory Appl. 1-41 (2023), <https://doi.org/10.1007/s10957-023-02319-9>
4. (with P. D. Khanh, and B. S. Mordukhovich) A New Inexact Gradient Descent Method with Applications to Nonsmooth Convex Optimization, Optim. Methods Softw. 1-29 (2024), <https://doi.org/10.1080/10556788.2024.2322700>
5. (with P. D. Khanh, B. S. Mordukhovich and V. T. Phat) Inexact proximal methods for weakly convex functions, to appear J. Global Optim. (2024)
6. (with P. D. Khanh, H-C. Luong and B. S. Mordukhovich) Fundamental convergence analysis of sharpness-aware minimization, to appear Advances in NeurIPS (2024)
7. (with P. D. Khanh, H-C. Luong, B. S. Mordukhovich and T. Vo) Convergence of Sharpness-aware minimization with momentum, to appear in Proceedings of ITTA 2024, Communications in Computer and Information Science

8. (with P. D. Khanh and B. S. Mordukhovich) Globally convergent derivative-free methods in nonconvex optimization with and without noise, submitted (2024)
9. (with D. H. Cuong, P. D. Khanh and B. S. Mordukhovich) Local analysis of derivative-free methods in the present of Kurdyka-Łojasiewicz inequality, submitted (2024)
10. (with P. D. Khanh and B. S. Mordukhovich) Convergence of first-order methods with momentum from the perspective of an inexact gradient descent method, submitted (2024)

TALKS

SEMI-PLENARY INVITED TALKS

1. General Derivative-Free Optimization Methods under Global and Local Lipschitz Continuity of Gradients, In Workshop on Nonsmooth Optimization and Applications (NOPTA), Antwerp, Belgium (2024)

CONTRIBUTED TALKS

1. Inexact gradient methods in nonconvex smooth, nonsmooth, and derivative-free optimization, at the 25th Midwest Optimization Meeting, University of Michigan - Ann Arbor, Michigan (2023)
2. A New Inexact Gradient Descent Method with Applications to Nonsmooth Convex Optimization
 - SIAM Conference on Optimization, University of Washington, Seattle (2023)
 - International Conference on Optimization and Variational Analysis with Applications, Ha Noi, Vietnam (2023)
3. Inexact reduced gradient methods in smooth nonconvex optimization
 - Midwest Optimization Meeting, University of Waterloo, Canada (2022)
 - Great Lakes SIAM annual meeting, Wayne State University (2022)
 - International Symposium on Generalized Convexity and Monotonicity, Peru (2022).
 - Applied Mathematics & Analysis seminar at the Mathematics Department, Wayne State University (2022)
4. Generalized Damped Newton Algorithms in Nonsmooth Optimization, at the 23rd Midwest Optimization Meeting, Grand Valley State University (2021)

SERVICE

ORGANIZING PROFESSIONAL EVENTS

1. SIAM Great Lakes Section Annual Meeting, WSU, 2022 (≈ 200 participants)
2. Iranian Geometry Olympiad, local organizer, 2018 (≈ 100 participants)

MATHEMATICAL REVIEW

Mathematical Programming Computation; Journal of Optimization Theory and Applications; Optimization; Optimization Letters; Set-Valued and Variational Analysis; Vietnam Journal of Mathematics; Bulletin of the Iranian Mathematical Society.

HONORS & AWARDS

TRAVEL AWARDS

2020 - now

1. To attend Workshop on Nonsmooth Optimization and Applications, Antwerp, Belgium (NOPTA 2024), provided by Graduate Student Professional Travel Awards (WSU) and NSF under grants DMS-1808978 and DMS2204519.
2. To attend Midwest Optimization Meeting, University of Michigan (2023), provided by University of Michigan
3. To attend Midwest Optimization Meeting, University of Waterloo (2022), provided by Graduate Student Professional Travel Awards (WSU)
4. To attend SIAM Conference on Optimization, University of Washington (2023), provided by Graduate Student Professional Travel Awards (WSU) and NSF under grants DMS-1808978 and DMS2204519.

WAYNE STATE UNIVERSITY

2020 - now

1. Rumble Research Fellowship (2024-2025)
2. The M.F. Janowitz Endowed Mathematics Scholarship (2021, 2024)
3. The William Martin Borgman Endowed Scholarship for Mathematics (2022, 2023)
4. The Robert and Nancy Irvan Endowed Scholarship in Mathematics (2022, 2023)

HO CHI MINH CITY UNIVERSITY OF EDUCATION

2015 - 2019

1. Second Prize in Student Scientific Research Conference in Mathematics (2019)
2. Second Prize in Algebra at National Mathematics Olympiad (2017)
3. AMA Scholarship for excellent student in Vietnam (2015-2019)

TEACHING EXPERIENCE

WAYNE STATE UNIVERSITY

2020-2025

1. MAT 2010 - Calculus I (Winter 2023) - Main Instructor
2. MAT 1070 - College Algebra (Fall 2022, Fall 2023, Winter 2024) - Main Instructor
3. MAT 1800 - Elementary Functions (Fall 2021) - Main Instructor
4. MAT 5890 - Convex Analysis (Fall 2024) - Substitute Instructor

HO CHI MINH CITY UNIVERSITY OF EDUCATION

2020-2025

1. Theory of Multiobjective Optimization (Summer 2022)
2. National Mathematical Olympiad Training for students in Bao Loc High School for the gifted: Combinatorics and Calculus (2016-2020)

GIA DINH HIGH SCHOOL

2019-2020

1. National Mathematical Olympiad Training for Gia Dinh Highschool students: Combinatorics, Calculus and Geometry
2. National Mathematical Olympiad Training for students in the Central region: Combinatorics and Calculus
3. Algebra, Calculus, Geometry

SKILLS

PROGRAMMING LANGUAGE FRAMEWORKS & TOOLS LANGUAGES

Experienced: MATLAB | Python
Excel | Word | Latex
Native: Vietnamese | **Fluent:** English

Familiar: JavaScript | HTML