

Yiwen Chen

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📍 Department of Mathematics, University of British Columbia, Kelowna, British Columbia, Canada

Last updated: June 19, 2026

EDUCATION

PhD in Mathematics

University of British Columbia

- **Supervisors:** Warren Hare, Amy Wiebe

Sep. 2024 – current
Department of Mathematics

MSc in Mathematics

University of British Columbia

- **Supervisors:** Warren Hare, Amy Wiebe
- **Thesis:** Q -fully quadratic modeling and its application in a random subspace derivative-free method

Sep. 2022 – Apr. 2024
Department of Mathematics

Visiting Student in Mathematics

University of British Columbia

- **Grades:** Academic average: 94.5/100

Sep. 2021 – Dec. 2021
Department of Mathematics

BSc in Mathematics

Beihang University

- **Major:** Mathematics and Applied Mathematics (Hua Luogeng Mathematics Class)
- **Grades:** Academic average: 89.94/100
- **Thesis:** A new simplex derivative and its applications
 - * Outstanding Bachelor's Thesis Award

Sep. 2018 – Jun. 2022
School of Mathematical Sciences

RESEARCH EXPERIENCE

Invited Research Visit (University of Coimbra)

- **Host:** João Gouveia

Jun. 2026 – Jul. 2026

Invited Research Visit (University of Melbourne)

- **Host:** Lindon Roberts
- **Topic:** Accuracy and relationships of quadratic models in derivative-free optimization
- **Contribution:** Developed fully linear and directional Hessian error bounds for widely-used quadratic models in derivative-free optimization. Characterized relationships among these models by identifying conditions under which they coincide and clarifying their structural connections.

Nov. 2025 – Dec. 2025

Mitacs Globalink Research Intern (University of British Columbia, online)

- **Supervisor:** Warren Hare
- **Topic:** Error analysis of surrogate models constructed through operations on sub-models
- **Contribution:** Analyzed the relation between the accuracy of sub-models and the model created through their operations (product, quotient, composition). Developed a framework that can be used in model error analysis and future research in derivative-free optimization algorithms design.

Jul. 2021 – Sep. 2021

PUBLICATIONS

Papers under Review

- [1] Yiwen Chen, Warren Hare, and Lindon Roberts. Accuracy and relationships of quadratic models in derivative-free optimization, (submitted) May 2026. [arXiv preprint](#) [↗](#)
- [2] Yiwen Chen. Relationships between full-space and subspace quadratic interpolation models and simplex derivatives, (submitted) February 2026. [arXiv preprint](#) [↗](#)
- [3] Yiwen Chen, Warren Hare, and Amy Wiebe. CLARSTA: A random subspace trust-region algorithm for convex-constrained derivative-free optimization, (submitted) June 2025. [arXiv preprint](#) [↗](#)

Journal Publications

- [1] Yiwen Chen, João Gouveia, Warren Hare, and Amy Wiebe. Determining inscribability of polytopes via rank minimization based on slack matrices. *SIAM Journal on Discrete Mathematics*, 40(2):680–705, 2026. [↗](#)
- [2] Yiwen Chen, Warren Hare, and Amy Wiebe. A general framework for floating point error analysis of first-order simplex derivatives. *Optimization Methods and Software*, 2025. [↗](#)
 - Featured by the UBC Okanagan Faculty of Science on official social media channels [\[LinkedIn\]](#) [\[Instagram\]](#)
- [3] Yiwen Chen, Warren Hare, and Amy Wiebe. Q -fully quadratic modeling and its application in a random subspace derivative-free method. *Computational Optimization and Applications*, 89(2):317–360, 2024. [↗](#)
- [4] Yiwen Chen and Warren Hare. Adapting the centred simplex gradient to compensate for misaligned sample points. *IMA Journal of Numerical Analysis*, 44(3):1821–1861, 2024. [↗](#)
- [5] Yiwen Chen, Warren Hare, and Gabriel Jarry-Bolduc. Error analysis of surrogate models constructed through operations on submodels. *Mathematics of Operations Research*, 49(1):1–18, 2024. [↗](#)

TALKS

Invited Seminars

- NOVA Math, Universidade Nova de Lisboa, Caparica, Portugal Jul. 23, 2026
- University of Melbourne, Melbourne, Australia Dec. 5, 2025
- COCANA Seminar & PIMS-CORDS SFU Operations Research Seminar, Kelowna, Canada Apr. 4, 2024

Invited Talks at Conferences & Workshops

- Optimization, Lisbon, Portugal Jul. 20 – Jul. 22, 2026
- DFOS (Derivative-free Optimization Symposium), Montréal, Canada Jun. 22 – Jun. 26, 2026
- INFORMS Optimization Society Conference, Atlanta, United States Mar. 20 – Mar. 22, 2026
- AustMS Meeting, Melbourne, Australia Dec. 9 – Dec. 12, 2025
- WCOM (West Coast Optimization Meeting), Kelowna, Canada Oct. 17 – Oct. 18, 2025
- MOPTA (Modeling and Optimization: Theory and Applications), Ponta Delgada, Portugal Jun. 17 – Jun. 20, 2025
- CMS 80th Anniversary Summer Meeting, Québec, Canada Jun. 6 – Jun. 9, 2025
- WCOM (West Coast Optimization Meeting), Vancouver, Canada Sep. 20 – Sep. 21, 2024
- ISMP (International Symposium on Mathematical Programming) 2024, Montréal, Canada Jul. 21 – Jul. 26, 2024
- DFOS (Derivative-free Optimization Symposium), Kelowna, Canada Jul. 17 – Jul. 22, 2022

INVITED WORKSHOP PARTICIPATION

Gender Equity in the Mathematical Study (GEMS) of Optimization, Kelowna, Canada Aug. 3 – Aug. 9, 2025

- Participation by invitation only; approximately 30 participants selected worldwide.

TEACHING EXPERIENCE

Graduate Teaching Assistant (University of British Columbia)

Sep. 2022 – current

- MATH/COSC 303: Numerical Analysis (grading, tutorials teaching) Spring 2026 & Spring 2025
- MATH 340: Introduction to Linear Programming (grading) Spring 2025
- MATH 461/563: Continuous Optimization (grading) Fall 2024
- MATH 327: Analysis I (grading) Fall 2024
- MATH 200: Calculus III (tutorials teaching) Fall 2024 & Fall 2023 & Fall 2022
- MATH/COSC 303: Numerical Analysis (grading, tutorials teaching) Spring 2024
- MATH 221: Matrix Algebra (tutorials teaching, invigilation/grading organizing) Spring 2024 & Spring 2023
- MATH 462/562: Derivative-Free Optimization (grading) Fall 2023

SERVICE AND VOLUNTEERING

Conference Service

- Session co-organizer, Optimization 2026, Lisbon, Portugal Jul. 20 – 22, 2026

Reviewer

- SIAM Journal on Optimization
- Computational Optimization and Applications
- Journal of Optimization Theory and Applications
- Optimization Methods and Software
- Set-Valued and Variational Analysis

Volunteer of “Math to Power Her Life” Program (University of British Columbia)

Mar. 2023

- Designed and hosted a workshop on hyperbolic geometry for approximately 60 middle-school girls. Encouraged young girls to stay tuned to their mathematical interests and pursue mathematical dreams.

HONOURS AND AWARDS

Honours

- Student Researcher of the Year Finalist (UBC) 2023

Fellowships

- Mitacs Globalink Graduate Fellowship, \$15000 2022

Scholarships

- Killam Doctoral Scholarship, \$40000/year Sep. 2025 - Sep. 2027
- UBC Okanagan Graduate Research Scholarships Sep. 2022 - Sep. 2028
- Hua Luogeng Scholarship (Chinese Academy of Sciences) 2021
- First Prize Scholarship for Excellence in Competitions (Beihang University) 2021
- Third Prize Scholarship for Excellence in Studies (Beihang University) 2021

Awards

- UBC Okanagan Distinguished Doctoral Scholar Award, \$20000/year + tuition Sep. 2024 - Sep. 2028
- Faculty of Science Graduate Entrance Award (UBC), \$15000 2024
- International Four-Year Doctoral Partial Tuition Award (UBC) Sep. 2024 - Sep. 2028
- Outstanding Bachelor's Thesis Award (Beihang University) 2022
- First Prize in the 31st Chinese Chemistry Olympiad (Preliminary) 2017

SKILLS

Technical : C, C++, Python, MATLAB, LaTeX

Languages : Native Chinese, fluent English