Wenqing Ouyang

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Education

2020–2024 **PhD, Data Sicence. Research focus: Optimization Theory**, *The Chinese University of Hong Kong (Shenzhen)*, School of Data Science

Advisor: Professor Andre Milzarek

2017–2020 **MS, Computational Mathematics. Research focus: Computer Graphics**, *University of Science and Technology of China*, School of Mathematics and Science

Advisor: Professor Ligang Liu

2013–2017 **BS, Information and Computing Science**, *University of Science and Technology of China*, School of Mathematics and Science

Journal Publications

Wenqing Ouyang, Andre Milzarek. Variational Properties of Decomposable Functions. Part I: Strict Epi-Calculus and Applications[J]. SIAM Journal on Optimization, to appear.

Wenqing Ouyang, Andre Milzarek. Variational Properties of Decomposable Functions. Part II: Strong Second-Order Theory[J]. SIAM Journal on Optimization, to appear.

Hanfeng Zeng, **Wenqing Ouyang**, Andre Milzarek. A linesearch-type normal map-based semismooth Newton method for nonsmooth nonconvex composite optimization[J]. Computational Optimization and Applications, 2026.

Cedric Josz, **Wenqing Ouyang**. Reachability of gradient descent[J]. Optimization Letters, 2026.

Wenqing Ouyang, Yuncheng Liu, Ting Kei Pong, Hao Wang. Kurdyka-Łojasiewicz exponent via Hadamard parametrization[J]. SIAM Journal on Optimization, 2025, 35(1): 62-91.

Wenqing Ouyang, Andre Milzarek. A trust region-type normal map-based semismooth Newton method for nonsmooth nonconvex composite optimization[J]. Mathematical Programming, 2025, 212(1-2): 389-435.

Wenqing Ouyang, Yang Liu, Andre Milzarek. Descent properties of an Anderson accelerated gradient method with restarting[J]. SIAM Journal on Optimization, 2024, 34(1): 336-365.

Wenqing Ouyang, Jiong Tao, Andre Milzarek, Bailin Deng. Nonmonotone globalization for Anderson acceleration via adaptive regularization[J]. Journal of Scientific Computing, 2023, 96(1): 5.

Mo Li, Qing Fang, **Wenqing Ouyang**, Ligang Liu, Xiao-Ming Fu. Computing sparse integer-constrained cones for conformal parameterizations[J]. ACM Transactions on Graphics (TOG), 2022, 41(4): 1-13.

Zheng-Yu Zhao, Qing Fang, **Wenqing Ouyang**, Zheng Zhang, Ligang Liu, Xiao-Ming Fu. Developability-driven piecewise approximations for triangular meshes[J]. ACM Transactions on Graphics (TOG), 2022, 41(4): 1-13.

Qing Fang, **Wenqing Ouyang**, Mo Li, Ligang Liu, Xiao-Ming Fu. Computing sparse cones with bounded distortion for conformal parameterizations[J]. ACM Transactions on Graphics (TOG), 2021, 40(6): 1-9.

Wenqing Ouyang, Yue Peng, Yuxin Yao, Juyong Zhang, Bailin Deng. Anderson acceleration for nonconvex ADMM based on Douglas-Rachford splitting[C]//Computer Graphics Forum. 2020, 39(5): 221-239.

Juyong Zhang*, Yue Peng*, **Wenqing Ouyang***, Bailin Deng. Accelerating ADMM for efficient simulation and optimization[J]. ACM Transactions on Graphics (TOG), 2019, 38(6): 1-21. (Co-first author.)

Yucheng Sun, **Wenqing Ouyang**, Zhongyuan Liu, Ning Ni, Yann Savoye, Peng Song, Ligang Liu. Computational design of self-actuated deformable solids via shape memory material[J]. IEEE Transactions on Visualization and Computer Graphics, 2020, 28(7): 2577-2588.

Preprints

Cedric Josz, **Wenqing Ouyang**. Computing Kurdyka-Łojasiewicz exponents via composition and symmetry[J]. arXiv preprint arXiv:2602.22553, 2026. (Submitted to Mathematical Programming)

Hanfeng Zeng, Yang Liu, **Wenqing Ouyang**, Andre Milzarek. A MINRES-based linesearch algorithm for nonconvex optimization with non-positive curvature detection[J]. arXiv preprint arXiv:2601.01575, 2026. (Submitted to Mathematical Programming)

Wenqing Ouyang. Kurdyka-Łojasiewicz exponent via square transformation[J]. arXiv preprint arXiv:2506.10110, 2025. (Submitted to SIAM Journal on Optimization, major revision)

Wenqing Ouyang, Ting Kei Pong, Man-Chung Yue. Burer-Monteiro factorizability of nuclear norm regularized optimization[J]. arXiv preprint arXiv:2505.00349, 2025. (Submitted to Mathematics of Operations Research, major revision)

Experience

Oct 2024 to Now	**Postdoc Research Scientist**, *Columbia University*, supervised by Prof. Cedric Josz.
July 2024 to Sep 2024	**Research Assitant**, *The University of Hong Kong*, supervised by Dr. Manchung Yue.
Sep 2023 to June 2024	**Research Associate**, *The Hong Kong Polytechnic University*, supervised by Prof. Ting Kei Pong.
June 2023	**Contributed Talk**, *Variational Properties of Decomposable Functions*, SIAM Conference on Optimization 2023
2019 Nov to 2020 August	**Visiting Student**, *The Chinese University of Hongkong (Shenzhen)*
2019 Winter	**Attending Conference**, *Conference on Nonsmooth Analysis and Applications*

Teaching Assistant

2023 Spring	**DDA 6001 Stochastic Process**, The Chinese University of Hongkong (Shenzhen)
2022 Fall	**DDA 6010 Optimization Theory and Algorithms**
2022 Spring	**MAT 4010 Functional Analysis**
2021 Fall	**DDA 6010 Optimization Theory and Algorithms**
2021 Spring	**MAT 4010 Functional Analysis**
2020 Fall	**MAT3007 Optimization**
2019 Spring	**Real Analysis**, *University of Science and Technology of China*
2018 Fall	**Finite Element Method**, *University of Science and Technology of China*

Honors

2021-2022	Shenzhen Institute of Artificial Intelligence and Robotics for Society (AIRS) fellowship for talented doctoral students
2020-2022	Shenzhen Research Institute of Big Data (SRIBD) fellowship
2023-2024	Guotai Jun'an scholarship
2024	Presidential Award for Outstanding Doctoral Students, The Chinese University of Hong Kong, Shenzhen.
2025	Mathematical Programming Meritorious Service Award.