Ying Lin

linyopt.github.io

Department of Data and Systems Engineering
The University of Hong Kong
Hong Kong, China
ylin95@hku.hk or linying@live.cn

Research Interest

- **Machine learning and data science**
  Theories, algorithms and applications, especially *sparse learning*, *support vector machine*, *kernel-based learning* and *neural networks*, etc.
- **Continuous Optimization**
  Convex and nonconvex optimization: theories, algorithms and applications. Special topics about *error bounds*.

Work Experience

2024.11 – present	Postdoc Fellow, Department of Data and Systems Engineering, The University of Hong Kong **Supervisor**: Prof. Man-Chung Yue
2021.09 – 2024.09	Teaching Assitant, Department of Applied Mathematics, The Hong Kong Polytechnic University

Education

2021.09 - 2024.09	Ph.D., Applied Mathematics, The Hong Kong Polytechnic University, Hong Kong, China. **Supervisor**: Prof. Ting Kei Pong
2018.09 - 2021.06	M.Phil., Computational Mathematics, South China Normal University, Guangzhou, China. **Supervisor**: Prof. Dr. Qi Ye
2014.09 - 2018.06	BA, Information and Computing Science, South China Normal University, Guangzhou, China. **Advisor**: Prof. Dr. Qi Ye

Preprints

1. **Ying Lin**, Tianxiang Liu, Bruno F. Lourenço. *Facial reduction for nice (and non-nice) convex programs*. Submitted December 2025.
2. **Ying Lin**, Yao Kuang, Ahmet Alacaoglu, Michael P. Friedlander. *Decentralized Optimization with Topology-Independent Communication*. Submitted September 2025. Julia Code available in Michael's GitHub organization.

3. **Ying Lin**, Benjamin Poignard, Ting Kei Pong, Akiko Takeda. *Break recovery in graphical networks with D-trace loss*. Submitted October 2024. MATLAB Code available in my GitHub repository.

PUBLICATIONS

1. **Ying Lin**, Scott B. Lindstrom, Bruno F. Lourenço, Ting Kei Pong. *Tight error bounds for log-determinant cones without constraint qualifications*. Journal of Optimization Theory and Applications, 2025, volume 205, article 45.

2. **Ying Lin**, Scott B. Lindstrom, Bruno F. Lourenço, Ting Kei Pong. *Generalized power cones: optimal error bounds and automorphisms*. SIAM Journal on Optimization, 2024, 34(2):1316-1340.

3. **Ying Lin**, Yimin Wei, Qi Ye*. *A Homotopy method for multikernel-based approximation*. Journal of Nonlinear and Variational Analysis, 2022, 6(2):139-154.

4. **Ying Lin**, Qi Ye*. *Support vector machine classifiers by non-Euclidean margins*. Mathematical Foundations of Computing, 2020, 3(4):2-5.

5. **Ying Lin**, Rongrong Lin*, Qi Ye. *Sparse regularized learning in the reproducing kernel Banach spaces with the ℓ^1 norm*. Mathematical Foundations of Computing, 2020, 3(3):205-218.

6. Qi Ye*, **Ying Lin**. *Application of machine learning methods based on LAZE priors in cancer data*. Journal of South China Normal University (Natural Science Edition), 2018, 50(04):115-120.
In Chinese, part of Bachelor's thesis.

TALKS

2025.12 *Convex facial reduction algorithms and strong extended duals*
Cones: Theory and Optimization, Kyoto University, Kyoto, Japan

2025.11 *Convex facial reduction algorithms and strong extended duals*
APORS Youth Forum, The Hong Kong Polytechnic University, Hong Kong, China

2023.06 *Error bounds for the generalized power cone and applications in algebraic structure*
SIAM Conference of Optimization (OP23), Seattle, Washington, U.S.

2022.12 *Error bounds for the generalized power cone and applications in algebraic structure*
CAS AMSS-PolyU SIAM Student Chapter Workshop, online

2020.11 *Non-Euclidean support vector classifiers for sparse learning*
CSIAM Students Forum 2020, online

2020.10 *Non-Euclidean support vector classifiers for sparse learning*
CSIAM 2020, Changsha, Hunan Province, China

2019.10 *Support vector machine classifiers by maximum margin of arbitrary norm*
2019 Optimization Frontier Progress Seminar, China West Normal University, Nanchong, Sichuan Province, China

2018.10 *The sparse regression model based on LAZE prior – The application in prostate cancer detection*
Information Science Young Scientist Forum, Jinan University, Guangzhou, Guangdong Province, China

2018.07 *The sparse regression model based on LAZE prior – The application in prostate cancer detection*
ICSA 2018, Qingdao, Shandong Province, China

VISITING EXPERIENCES

2024.01 – 2024.05 Department of Applied Mathematics, The University of British Columbia
Host: Professor Michael P. Friedlander

2023.03 The Institute of Statistical Mathematics
Host: Professor Bruno F. Lourenço