

LIDING XU

📍 Berlin, Germany

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BIO

Zuse Institute Berlin, Berlin

April 2024 - Present

- Postdoc researcher, Interactive Optimization and Learning Lab

LIX CNRS, École Polytechnique, Palaiseau

September 2020 - December 2023

- PhD in Computer Science: “Relaxation methods for mixed-integer nonlinear programming”

- Supervisors: Leo Liberti (director), Claudia D’Ambrosio (co-director), Sonia Haddad-Vanier (co-supervision)

Université Paris-Saclay, Orsay

September 2019 - September 2020

- M2 in Applied Mathematics, Optimization

École Polytechnique, Palaiseau

September 2018 - August 2019

- M1 in Computer Science

Peking University, Beijing

September 2014 - June 2018

- Bachelor in Machine Intelligence

RESEARCH INTERESTS

Mixed integer nonlinear programming, their applications, and algorithmic implementations.

PUBLICATIONS

Liding Xu, Gioni Mexi, and Ksenia Bestuzheva. 2025. “<https://arxiv.org/abs/2502.01192>.” arxiv preprint (submitted).

Liding, Xu and Leo, Liberti. 2024. “Relaxations for binary polynomial optimization via signed certificate.” arxiv preprint (submitted).

Liding, Xu and Claudia, D’Ambrosio. 2024. “Formulations of the continuous set-covering problem on networks: a comparative study” arxiv preprint (submitted).

Liding, Xu and Leo, Liberti. 2024. “Submodular Maximization and its Generalization through Intersection Cuts.” Mathematical Programming.

Liding, Xu and Claudia, D’Ambrosio and Leo, Liberti and Sonia Haddad, Vanier. 2023. “On Cutting Planes for Signomial Programming” arxiv preprint (accepted by SIAM Journal on Optimization).

Liding, Xu and Claudia, D’Ambrosio and Emiliano, Traversi and Sonia Haddad, Vanier. 2023. “Branch and Price for Submodular Bin Packing.” EURO Journal on Computational Optimization.

Mercedes, Pelegrín and Liding, Xu. 2023. “Continuous Covering on Networks: Improved Mixed Integer Programming Formulations.” Omega.

Liding, Xu, and Sonia Haddad, Vanier. 2022. “Branch-and-Price for Energy Optimization in Multi-Hop Wireless Sensor Networks.” Networks.

Antoine Oustry and Liding Xu, Sonia Haddad-Vanier, Juan-Antonio Cordero and Thomas Clausen. “Optimization in Wireless Networks.” Encyclopedia of Optimization.

Liding Xu, Claudia D’Ambrosio, Sonia Haddad-Vanier and Emiliano Traversi. “Urban Air Mobility.” Encyclopedia of Optimization.

SOFTWARE (SELECTED)

cbp: branch-and-price algorithms for conic submodular binpacking.

cflg: an algorithmic toolkit for continuous set covering on networks.

wUMCFC: a solver for wireless unsplittable multi-commodity flow routing with network coding.

SymMIP.jl: symmetry analysis for MIPs.

Traces.jl: a traces wrapper for graph canonical labeling and automorphism group computation.

PRESENTATIONS AND ATTENDANCE

EURO2024, Copenhagen, Denmark *July 2024*

Talk: Modelling of piece-wise linear concave constraints in continuous covering problems

43e Journée Francilienne de Recherche Opérationnelle: BinPacking workshop *February 2024*

Talk: Branch and price for submodular bin packing

Oberwolfach Workshop: Mixed-integer Nonlinear Optimization *August 2023*

Attendance

Aussois combinatorial optimization workshop, Aussois, France *January 2023*

Talk: Intersection cut meet submodularity

PGMO2022, Paris, France *November 2022*

Talk: On a concept of a generic intersection cut callback

SCIP2022, Berlin, German *November 2022*

Talk: On a concept of a generic intersection cut callback

HUGO2022, Szeged, Hungary *September 2022*

Talk: (Three) cutting planes for signomial programming

EURO2022, Espoo, Finland *July 2022*

Talk: An algorithmic toolkit for continuous set-covering on networks

EURO2021, Athens, Greece *July 2021*

Talk: Optimal location of safety landing sites

ROADEF2021, Mulhouses, France *April 2021*

Talk: Optimal location of safety landing sites

FUNDS AND FELLOWSHIP

Research Campus MODAL funded by the German Federal Ministry of Education and Research (BMBF): 1 year *April 2024 - March 2025*

FX-Conseil - Fondation de l'Ecole Polytechnique (Research Foundation of the Ecole Polytechnique): 6 months *October 2024 - March 2024*

École doctorale IP Paris (French Ministry of Higher Education and Research): 3 years *September 2020 - September 2024*

Labex DigiCosme scholarship for master students: 1 year *September 2018 - August 2019*

LANGUAGES

Chinese: Mother Tongue
English: Fluent
French: Beginner