



WELCOME TO LOUVAIN-LA-NEUVE!

ALGOPT 2024 @ UCLouvain



European Research Council
Established by the European Commission

ALGOPT2024 workshop on Algorithmic Optimization: Tools for AI and Data Science



ERC ACCOPT
ACcelerated Convex OPTimization



ALGOPT2024 workshop on Algorithmic Optimization: Tools for AI and Data Science August 27-30, 2024, UCLouvain, Belgium

In the context of the [ERC Advanced Grant program ACCOPT](#), we are delighted to organize a closing workshop, gathering recognized researchers active in the area of algorithmic optimization and its applications to artificial intelligence and data science.

Optimization methods are fundamental to data science and AI, enabling critical tasks such as sparse data recovery, clustering, dimensionality reduction, and data completion. They are also essential for training machine learning models, including neural networks. However, existing optimization methods are being constantly challenged by the particular features of modern applications. For example, emerging problems related to data science and AI often involve a huge number of variables, complex data structure, and may require distributed data support. Consequently, there is a rising demand for the development of new optimization methods customized for specific applications and ideally supported by provable efficiency guarantees. This workshop aims to bring together experts interested in the theory, design, and application of optimization methods. It will serve as a platform for sharing the latest advancements in Algorithmic Optimization, promoting idea exchange and scientific collaborations.

The workshop will also honor Professor Yurii Nesterov, celebrating 50 years of his research career in Optimization.

Yurii Nesterov

50 years in Optimization



Yurii Nesterov

50 years in Optimization

On uniformly convex functionals

AA Vladimirov, YE Nesterov, YN Chekanov

Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet 3, 12-23

82

1978

Improved global performance guarantees of second-order methods in convex minimization

P Dvurechensky, Y Nesterov

arXiv preprint arXiv:2408.11022

2024



Yurii Nesterov

Article [Talk](#)

From Wikipedia, the free encyclopedia

Yurii Nesterov is a Russian [mathematician](#), an internationally recognized expert in [convex optimization](#), especially in the development of efficient [algorithms](#) and [numerical optimization analysis](#). He is currently a [professor](#) at the [University of Louvain](#) (UCLouvain).

Biography [\[edit \]](#)

In 1977, Yurii Nesterov graduated in [applied mathematics](#) at [Moscow State University](#). From 1977 to 1992 he was a researcher at the [Central Economic Mathematical Institute](#) of the [Russian Academy of Sciences](#). Since 1993, he has been working at [UCLouvain](#), specifically in the Department of Mathematical Engineering from the [Louvain School of Engineering](#), [Center for Operations Research and Econometrics](#).

In 2000, Nesterov received the [Dantzig Prize](#).^[2]

In 2009, Nesterov won the [John von Neumann Theory Prize](#).^[3]

In 2016, Nesterov received the [EURO Gold Medal](#).^[4]

In 2023, Yurii Nesterov and [Arkadi Nemirovski](#) received the WLA Prize in Computer Science or Mathematics, "for their seminal work in convex optimization theory".^[5]

***Profound, transformative impact
on the field of Optimization***

Acceleration

Smoothing

***Generosity
with ideas***

***Cubic regularized Newton
& tensor methods***

***Random
coordinate descent***

Textbooks

Modesty

***Self-concordance &
interior-point***

ALGOPT2024 program

- **36 talks** and **30 posters**, single track

Schedule, titles, abstracts: see website <https://sites.uclouvain.be/algopt2024/>

Start at 8:30 on Wednesday and Thursday, at 9:20 on Friday

- **Coffee breaks:** upper level (mezzanine) @ **10:40-11:10** and **15:50-16:20**


- **Poster sessions:** during coffee breaks (two sections: Tue-Wed & Thu-Fri)

- **Lunch time: 12:30-14:00**

Many options nearby: Grand Place, Agora, Grand Rue, Rue Charlemagne

Website

<https://sites.uclouvain.be/algopt2024/>

Full program
Book of abstracts 

ALGOPT2024 workshop on
Algorithmic Optimization: Tools for AI and Data Science



ALGOPT2024 workshop

Algorithmic Optimization: Tools for AI and Data Science

August 27-30, 2024, UCLouvain, Belgium

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In the context of the [ERC Advanced Grant program ACCOPT](#), we are delighted to organize the area of algorithmic optimization and its applications to artificial intelligence and data science.

Optimization methods are fundamental to data science and AI, enabling critical tasks such as data completion. They are also essential for training machine learning models, including being constantly challenged by the particular features of modern applications. For example, a huge number of variables, complex data structure, and may require distributed data support. New optimization methods customized for specific applications and ideally supported by together experts interested in the theory, design, and application of optimization methods. Algorithmic Optimization, promoting idea exchange and scientific collaborations.

The workshop will also honor Professor Yurii Nesterov, celebrating 50 years of his research.

NEW The [detailed program](#) of the workshop is now available, see [this page](#). You can also contact us at [this page](#).

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Program

Click on a presenter's name for the talk title and schedule. The abstracts of all talks and posters are available in the [book of abstracts \(PDF file\)](#). Registration and welcome coffee will start on Tuesday August 27 at 8:45. A group walk will depart from Martin's hotel around 8:40.

	Tuesday August 27	Wednesday August 28	Thursday August 29	Friday August 30
8:30-9:20	8:45 Registration & coffee 9:10 Opening session	Coralia Cartis	George Lan	
9:20-10:10	Yinyu Ye	Levent Tunçel	Francis Bach	Tamás Terlaky

Website

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To use wifi :

- either use **eduroam**

- or connect to **AulaMagna** with
password **SEGEC2024**

HOME PROGRAM AND VENUE

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Modeling in economics and statistics

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[Book of abstracts \(PDF file\)](#).
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Friday August 30

8:30-9:20

9:10 Opening session

[Coralia Cartis](#)

[George Lan](#)

9:20-10:10

[Yinyu Ye](#)

[Levent Tunçel](#)

[Francis Bach](#)

[Tamás Terlaky](#)

Map



**Aula Magna
(glass building)**

**Martin's
Louvain-la-Neuve**

Ci scope

La Galoute

**Ciao
Stationery store**

Noodle Shop

Les Ateliers du Linge

La Galoute

**Restaurant
universitaire Le**

= places with restaurants

Social program

- **Wednesday afternoon: free** for visits in LLN or Brussels
Train to Brussels Central (~ one hour)
More information can be found on folders in your bags
- **Group picture** : Wednesday morning after last talk, ~**12:30**
- **Banquet dinner** : at Martin's hotel, Thursday **19:00**

Acknowledgements

Sponsors



European Research Council
Established by the European Commission



LIDAM
Louvain Institute of Data Analysis and
Modeling in economics and statistics



Organizers

Geovani Grapiglia
François Glineur

with the support of
Yurii Nesterov

Acknowledgements

Sponsors

Many thanks to the local organizing team @ CORE



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Nancy Guillaume



Séverine De Visscher



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