
Bavarian Optimization Meeting · 2024

The **Bavarian Optimization Meeting** brings together Bavaria-based researchers working on various topics of mathematical optimization. We are looking forward to hosting the meeting on **February 9th, 2024**, in Passau.

University of Passau, Building IM (HS 11)

Schedule (February 9th, 2024)

12:00 – 13:00 Light Lunch and Get Together

13:00 – 14:00 Keynote Talk 1

Gitta Kutyniok: Reliable AI Through the Lens of Optimization

Abstract

The new wave of artificial intelligence is impacting industry, public life, and the sciences in an unprecedented manner. However, one current major drawback is the lack of reliability. This is also acknowledged by political regularization attempts such as the EU AI Act and the G7 Hiroshima AI Process.

In this lecture we will take an optimization viewpoint towards this problem. We will first provide an introduction into this vibrant research area, focussing specifically on deep neural networks. We will then survey recent advances concerning the analysis of the training algorithm and explainability. Finally, we will discuss fundamental limitations of the training phase of deep neural networks, and reveal a surprising connection to novel computing approaches such as neuromorphic computing and quantum computing.

14:00 – 15:30 4x (15+5)-Minutes Talks

Speaker 1

Kevin-Martin Aigner: Scenario reduction for distributionally robust optimization

Speaker 2

Dorothee Henke: On the complexity of the bilevel shortest path problem

Speaker 3

Regina Schmidt: Relaxations for the elementary shortest path problem

Speaker 4

Ralf Werner: Some remarks and a conjecture on the computation of the $\{0, 1\}$ -rank of a $\{0, 1\}$ -cp matrix

15:30 – 16:00	Coffee Break
16:00 – 17:00	Keynote Talk 2 Timm Oertel: Proximity and Support Bounds for Integer Linear Optimization Problems Abstract In this talk I will consider two questions related to integer linear optimization problems (IPs) in standard form: What is the distance between optimal solutions of an IP and the corresponding linear relaxation? What is the minimal support of feasible and optimal solutions? For both problems, I will give an overview over old and new results.
17:00 – 18:00	3x (15+5)-Minutes Talks Speaker 1 Michael Markl: Schedule-Based Transit Networks with Hard Capacities Speaker 2 Hugo Kasuya: A $(3 + \epsilon)$ -approximation algorithm for the minimum sum of radii problem with outliers and extensions for generalized lower bounds Speaker 3 Tobias Mömke: A New Algorithm for Finding Degree-Bounded 2-Connected Subgraphs
18:30	Dinner @ Goldenes Schiff (at your own expense)

Registration

Please send an email to Natalie Fesl by **January 17th, 9 a.m.**, for registering to the workshop. For organizational purposes, please indicate in your registration, in case you

- will arrive after 13:00 or
- will not participate in the dinner @ Goldenes Schiff.

There is **no** conference fee.

Travel information

The Get Together and all talks will take place in building IM (HS 11), located in the middle of the campus from the University of Passau.

The closest bus stop is "Wörthstraße" and can be reached from the ZOB (central bus station) via line 8 and 9. It's also possible to take a short walk to the IM (Innstraße 33, 94032 Passau). Here you can see further [informations](#).

The dinner will be in Goldenes Schiff (Unterer Sand 8, 94032 Passau), which is very close to the university.

Contact

For further questions please contact [Tobias Harks](#) (chair holder) or Natalie Fesl (secretary).