



Deep Learning Theory Retreat

Program

Day 1 - April 10, 2024

08.30 - 10.00 - **Bus to Haifa**
10.00 - 10.30 - **Coffee and refreshments**
10.30 - 12.15 - **Guided tour in the area**
12.15 - 13.15 - **Lunch**

13.15 - 13.25 - Opening Remarks: **Nadav Cohen** and **Shiri Stempler**
13.25 - 13.45 - **Roi Livni** "Generalization in Generative Learning"
13.45 - 14.15 - Session 1 (Moderator: Meir Feder)
 Idan Attias (Yishay Mansour)
 "Information Complexity of Stochastic Convex Optimization:
 Applications to Generalization, Memorization, and Privacy"
 Liane Galanti (Lior Wolf)
 "Norm-Based Generalization Bounds for Sparse Neural Networks"

14.15 - 14.30 - **Coffee break**
14.30 - 15.15 - Session 2 (Moderator: Yishay Mansour)
 Maor Ivgi (Yair Carmon)
 "Beyond words: Benchmarking and Improving Pretraining Datasets for
 Large Language Models"
 Noam Razin (Nadav Cohen)
 "Vanishing Gradients in Reinforcement Finetuning of Language Models"
 Assaf Ben Kish (Raja Giryes)
 "Mitigating Open-Vocabulary Caption Hallucinations"

15.15 - 16.15 - **Coffee break + room check-in**
16.15 - 17.00 - Session 3 (Moderator: Lior Wolf)
 Matan Schliserman (Tomer Koren)
 "The Dimension Strikes Back with Gradients: Generalization of
 Gradient Methods in Stochastic Convex Optimization"
 Yaniv Fogel (Meir Feder)
 "Leave-One-Out Learning with Log-Loss"
 Yuval Milo (Nadav Cohen)
 "Provable Benefits of Complex Parameterization for Structured State
 Space Models"

17.00 - 17.15 - **Coffee break**

17.15 - 18.00 - Session 4 (Moderator: Raja Giryes)
 Tutorial: **Itamar Zimerman** (Lior Wolf)
 "Efficient Sequence Models: State-Space Layers (s4), Mamba,
 Hyena and Beyond"
18.45 - 19.30 - **Dinner**
19.30 - 20.30 - Session 5 (Moderator: Nadav Cohen)
 Panel Discussion: "The Role of Theory in Modern Deep Learning"
 Nadav Cohen, Meir Feder, Raja Giryes, Tamir Hazan (Technion)

20.30 - 22.00 - **Posters + wine & beer**

Day 2 - April 11, 2024

07.30 - 08.45 - **Breakfast**
08.45 - 09.45 - **Mindfulness Workshop**
09.45 - 10.20 - **Coffee break + room checkout**
10.20 - 11.05 - Session 6 (Moderator: Ran Gilad Bachrach)
 Orin Levy (Yishay Mansour)
 "Regret Minimization in Adversarial Contextual RL via
 Online Function Approximation"
 Itai Kreisler (Yair Carmon)
 "Accelerated Parameter-Free Stochastic Optimization"
 Yonatan Ariel Slutzky (Nadav Cohen)
 "The Effect of Data on the Implicit Bias of Recurrent Neural Networks"

11.05 - 11.20 - **Coffee break**
11.20 - 12.05 - Session 7 (Moderator: Yair Carmon)
 Amit Attia (Tomer Koren)
 "How Free is Parameter-Free Stochastic Optimization?"
 Shlomi Vituri (Meir Feder)
 "Universal Batch Learning Under The Misspecification Setting"
 Yotam Alexander (Nadav Cohen)
 "Implicit Bias in Linear Quadratic Control: Extrapolation to Unseen Initial States"

12.05 - 12.20 - **Coffee break**
12.20 - 13.05 - Session 8 (Moderator: Tomer Koren)
 Uri Sherman (Yishay Mansour + Tomer Koren)
 "Rate-Optimal Policy Optimization for Linear Markov Decision Processes"
 Tal Lancewicki (Yishay Mansour)
 "Delayed Feedback in Reinforcement Learning"
 Asaf Cassel (Tomer Koren)
 "Rate-Optimal Online Convex Optimization in Adaptive Linear Control"

13.05 - 13.10 - Closing Remarks: **Nadav Cohen**
13.10 - 14.00 - **Lunch**
14.10 - **Bus to Tel Aviv**

