



TAD
The AI and Data Science Center
Tel Aviv University

Deep Learning Theory Retreat

Program

Day 1 – February 19, 2023

08.30 - 09.45 – Bus to Zikhron Yaakov

09.45 - 12.15 – Guided walk in the area of Zikhron Yaakov

12.15 – Bus to Elma hotel

13.00 - 14.00 – Lunch

14.00 - 14.10 Welcome Talk – **Amir Globerson**

14.10 - 15.10 – Session 1 (Moderator: Meir Feder)

Raja Giryes – "Data model based learning"

Edo Cohen (Amir Globerson) – "Gradient Descent Learns Low Dimensional State Spaces"

Orin Levy (Yishay Mansour) – "Contextual MDP"

15.10 - 16.15 – Coffee break + room check-in

16.15 - 17.00 – Session 2 (Moderator: Yishay Mansour)

Giora Simhoni (Saharon Rosset) – "Integrating random effects into deep neural Networks"

Noam Razin & Tom Verbin (Nadav Cohen) – "On the Ability of Graph Neural Networks to Model Interactions Between Vertices"

Liad Erez (Tomer Koren) – "Regret Minimization in General Sum Markov Games"

17.00 - 17.15 – Coffee break

17.15 - 18.15 – Session 3 - Special session (Moderator: Amir Globerson)

18.15 - 19.30 – Free time + Dinner (from 18:30)

19.30 - 21.30 – Posters + Wine nearest neighbor

DEEP
LEARNING



Day 2 – February 20, 2023

07.30 - 09.30 – Breakfast & Room Checkout

09.30 - 10.15 – Session 4 (Moderator: Saharon Rosset)

Yaniv Fogel (Meir Feder) – "On individual batch learning"

Shahar Lutati (Lior Wolf) – "Local learning"

Itai Kriesler (Yair Carmon) – "What does gradient descent descend on"?

10.15 - 10.35 – Coffee Break

10.35 - 11.35 – Session 5 - special session (Moderator: Amir Globerson)

11.35 - 12.00 – Coffee Break

12.00 - 12.45 – Session 6 (Moderator: Lior Wolf)

Lian Galanti (Lior Wolf) – "Neural collapse = Emergence of structure"

Yotam Alexander & Nimrod De La Vega (Nadav Cohen) – "Deep Learning on High-Dimensional Spatially Unstructured Data via Elements of Quantum Entanglement"

Nimrod Harel (Ran Gilad Bachrach) – "Inherent inconsistencies in feature importance"

12.45 - 14.00 – Lunch

14.00 - 14.45 – Session 7 (Moderator: Ran Gilad-Bachrach)

Maya Bechler (Amir Globerson & Ran Gilad Bachrach) – "Implicit bias of graph learning"

Idan Amir (Roi Livni) – "The algorithmic bias of first order methods"

Yoni Choukroun (Lior Wolf) – "Error correcting codes with diffusion models"

14.45 - 15.05 – Coffee

15.05 - 15.50 – Session 8 (Moderator: Tomer Koren)

Kobi Bibas (Meir Feder) – "Uncertainty quantification for individual data"

Itamar Zimmerman (Lior Wolf) – "A Multidimensional State Space Layer for Spatial Transformers"

Amit Attia (Tomer Koren) – "Stability & generalization in optimization"

15.50 - 16.00 – Closing Remarks

16.00 - 16.30 – Coffee

16.30 – Bus to Tel Aviv

DEEP
LEARNING