Ron Dorfman

Curriculum Vitae

Haifa, Israel
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Github *Linkedin*

I'm a PhD student at Technion with a strong interest in machine learning through the lens of stochastic optimization. My goal is to apply my skills and expertise in this field to a challenging research role. I have a solid background in developing efficient algorithms with strong theoretical guarantees and I'm eager to contribute my knowledge to a dynamic and innovative research team.

Education

2021–2024 **Ph.D. student in Electrical Engineering**, *Technion - Israel Institute of Technology*.
- Research interests: Stochastic optimization; online learning; adaptive methods in machine learning.
- Advised by Prof. Kfir Y. Levy.

2018–2020 **M.Sc in Electrical Engineering**, *Technion - Israel Institute of Technology*.
- Graduated summa cum laude (top 4%). GPA: 95.3. Final exam: 94.
- Meyer fellowship award for graduate students.
- Thesis title: *Offline Meta Reinforcment Learning of Efficient Exploration*.
- Advised by Prof. Aviv Tamar.

2014–2019 **B.Sc in Electrical Engineering**, *Technion - Israel Institute of Technology*.
- Graduated summa cum laude (top 3%). GPA: 93.8.
- Major in Machine Learning, Control Theory, and Signal & Image Processing.

Work Experience

2022 **Ph.D. Research Intern**, VMWare Research, Herzliya, Israel.
Working on downlink compression for federated learning.
- A paper was published at ICML 2023.
- A patent application was filed and approved.

2018–present **Teaching Assistant**, Technion - Israel Institute of Technology, Haifa, Israel.
- Intro. to Random Signal Processing (046201) – Graduate level.
- Computational Methods in Optimization (046197) – Graduate level.

2018 **Research Intern**, Cornell Tech, New York City, NY, USA.
Applying signal processing and machine learning techniques for classification of concussed patients based on ECG signals.

2017–2018 **Wireless Communications and Networks Group**, RAFAEL, Haifa, Israel.
Areas: Communications, Machine Learning, Signal Processing.

2016–2017 **Electrical Validation Student**, Intel, Haifa, Israel.

Programming Skills

Languages Python, MATLAB, C.
Deep Learning Pytorch, Keras.

Research Projects

- **Detection and Localization of Cumulonimbus Clouds in Satellite Images**. Developing a joint space-time analysis framework of anomaly detection based on diffusion maps embedding and specific problem-related features. Received the **Wilk family award** for distinguished student's project. A paper was published at ICSEE 2018.
- **MAFAT Challenge - Fine-Grained Classification of Objects from Aerial Imagery**. Tackling the challenge of exploiting fine-grained information from aerial imagery data. Classifying objects into multiple granularity levels from high-resolution images using state-of-the-art computer vision and deep learning tools.

Publications

2023 **Ron Dorfman**, Shay Vargaftik, Yaniv Ben-Itzhak, and Kfir Yehuda Levy. DoCoFL: Downlink Compression for Cross-Device Federated Learning. In *International Conference on Machine Learning (ICML)*, 2023.

2022 **Ron Dorfman** and Kfir Y Levy. Adapting to mixing time in stochastic optimization with markovian data. In *International Conference on Machine Learning (ICML)*, pages 5429–5446. PMLR, 2022. (**Long Talk, 2%**).

2021 **Ron Dorfman**, Idan Shenfeld, and Aviv Tamar. Offline Meta Reinforcement Learning–Identifiability Challenges and Effective Data Collection Strategies. *Advances in Neural Information Processing Systems (NeurIPS)*, volume 34, pages 4607–4618, 2021.

2018 **Ron Dorfman**, Etai Wagner, Almog Lahav, Alon Amar, Ronen Talmon, and Yaron Halle. Spatio-Temporal Detection of Cumulonimbus Clouds in Infrared Satellite Images. In *2018 IEEE International Conference on the Science of Electrical Engineering in Israel (ICSEE)*, pages 1–5. IEEE, 2018. **(Best Student Paper Award)**.