Idan Achituve

COMPUTER VISION RESEARCHER & PH.D. STUDENT

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https://scholar.google.com/citations?user=UQIBiUcAAAAJ&hl=en&oi=ao

Education

The Faculty of Engineering, Bar-Ilan University   *Israel*

PH.D. IN MACHINE LEARNING   *Oct. 2019 - present*

- Thesis topic: Bayesian deep learning with limited data
- Advisors: Dr. Ethan Fetaya (EE) and Prof. Gal Chechik (Nvidia, CS)

The Computer Science Department, Bar-Ilan University   *Israel*

M.SC. IN AI AND MACHINE LEARNING   *Oct. 2017 - Sep. 2019*

- Thesis topic: Online banking fraud detection using sequences
- Advisors: Prof. Jacob Goldberger (EE) and Prof. Sarit Kraus (CS)
- Graduated with honors. GPA: 94.3

The Industrial Engineering Department, Ben-Gurion University   *Israel*

B.SC. IN INDUSTRIAL ENGINEERING   *Oct. 2011 - Sep. 2015*

- Majored in Information Systems
- Final project: designing and programming an Android application for PISGA center Beer-Sheva, Israel
- Graduated with honors. GPA: 89.7 (top 2%).

Industry Experience

Sony   *Israel*

COMPUTER VISION RESEARCHER   *Oct. 2023 - present*

- Publishing research papers in machine and deep learning

RSA Security   *Israel*

PRINCIPLE DATA SCIENTIST   *Oct. 2015 - Dec. 2019*

- Enhancing RSA's fraud detection capabilities in online banking and eCommerce using machine learning techniques
- Working with large banks from US, Europe and Pacific Asia. My research impacted millions of customers across the world

Awards, Fellowships & Grants

2023	**Rector award for outstanding Ph.D. student (the highest award in the university)**, Bar-Ilan University
2021	**Scholarship for outstanding doctoral fellows in data science**, Israel council for higher education
2020	**Presidential scholarship for outstanding doctoral fellows**, Bar-Ilan University **Award for research achievements**, the Gonda research center, Bar-Ilan University
2018	**Runner up (among $\sim$ 40 competitors) in a global initiative competition**, RSA security
2017	**Runner up (among $\sim$ 30 competitors) in a global initiative competition**, RSA security
2015	**Dean's honors award**, Ben-Gurion University
2014	**Department excellence award**, Ben-Gurion University
2013	**Department excellence award**, Ben-Gurion University

2012   **Department excellence award**, Ben-Gurion University

Presentations

INVITED TALKS

Nov. 2022. *Deep learning with Bayesian principles*. CS department colloquium, Haifa University.

Sep. 2022. *Effective Gaussian Process Classification With Deep Kernels for Problems With Limited Data*. CS department AI seminar, Vrije Universiteit Amsterdam.

May 2022. *Effective Gaussian Process Classification With Deep Kernels for Problems With Limited Data*. Dr. Ofir Lindenbaum's group seminar, Bar-Ilan University

CONTRIBUTED PRESENTATIONS

Mar. 2023. *Guided Deep Kernel Learning*. Cross-department machine learning seminar, Bar-Ilan University

Teaching Experience

Fall 2023	**Deep Learning**, Teaching Assistant
Fall 2022	**Deep Learning**, Teaching Assistant
Fall 2021	**Deep Learning**, Teaching Assistant
Spring 2014	**Planning & Control on the Production**, Teaching Assistant

Mentoring

2022   **Jonathan Samama**, Exploring the feature space of pre-trained deep kernels, Bar-Ilan University

Publications

PUBLISHED

Achituve, I., Wang, W., Fetaya, E., & Leshem, A. (2023). Communication Efficient Distributed Learning over Wireless Channels. In IEEE Signal Processing Letters.

Shamsian, A., Zhang, D., Navon, A., Zhang, Y., Kofinas, M., **Achituve, I.**, ... & Maron, H. (2023, November). Data Augmentations in Deep Weight Spaces. In NeurIPS 2023 Workshop on Symmetry and Geometry in Neural Representations.

Achituve, I., Chechik, G., & Fetaya, E. (2023). Guided Deep Kernel Learning. In Uncertainty in Artificial Intelligence.

Navon, A., Shamsian, A., **Achituve, I.**, Fetaya, E., Chechik, G., & Maron, H. (2023). Equivariant Architectures for Learning in Deep Weight Spaces. In International Conference on Machine Learning. **- Oral**

Penso, C., **Achituve, I.**, & Fetaya, E. (2022). Functional Ensemble Distillation. Advances in Neural Information Processing Systems, 35.

Navon, A., Shamsian, A., **Achituve, I.**, Maron, H., Kawaguchi, K., Chechik, G., & Fetaya, E. (2022, June). Multi-Task Learning as a Bargaining Game. In International Conference on Machine Learning (pp. 16428-16446). PMLR.

Achituve, I., Shamsian, A., Navon, A., Chechik, G., & Fetaya, E. (2021). Personalized Federated Learning with Gaussian Processes. Advances in Neural Information Processing Systems, 34, 8392-8406.

Achituve, I., Navon, A., Yemini, Y., Chechik, G., & Fetaya, E. (2021, July). GP-Tree: A Gaussian Process Classifier for Few-Shot Incremental Learning. In International Conference on Machine Learning (pp. 54-65). PMLR.

Navon, A. *, **Achituve, I.***, Maron, H., Chechik, G., & Fetaya, E. (2021). Auxiliary Learning by Implicit Differentiation. In the International Conference on Learning Representations (ICLR).

Achituve, I., Maron, H., & Chechik, G. (2021). Self-Supervised Learning for Domain Adaptation on Point Clouds. In Proceedings of the IEEE/CVF winter conference on applications of computer vision (pp. 123-133).

Achituve, I., Kraus, S., & Goldberger, J. (2019, October). Interpretable Online Banking Fraud Detection Based on Hierarchical Attention Mechanism. In 2019 IEEE 29th International Workshop on Machine Learning for Signal Processing (MLSP) (pp. 1-6). IEEE.

Preprints

Rahamim, O., Segev, H., **Achituve, I.**, Kasten, Y., Atzmon, Y., and Chechik, G. (2024). Personalized 3D Object Arrangement Using Text-to-Image Priors.

Achituve, I., Diamant, I., Metzer A., Chechik, G., & Fetaya, E. (2024). Bayesian Uncertainty for Gradient Aggregation in Multi-Task Learning.

Diamant, I., Rosenfeld, A., **Achituve, I.**, Goldberger, J., Netzer A.(2024). De-Confusing Pseudo-Labels in Source-Free Domain Adaptation.

Lapid, A., **Achituve, I.**, Bracha L., Fetaya, E. (2023). GD-VDM: Generated Depth for Better Diffusion-Based Video Generation.

Patents

Achituve, I., Herskovic, M., Ben-Porat, L., Aboudy, T., & Navri, O. (2021). Combining static and dynamic models for classifying transactions. U.S. Patent No. 11,005,861. Washington, DC: U.S. Patent and Trademark Office.

Amram, S., Sahar, C., Gendelev, A., & **Achituve, I.** (2019). Smoothing of discretized values using a transition matrix. U.S. Patent No. 10,511,585. Washington, DC: U.S. Patent and Trademark Office.

Extra Activity

Organizing Committee Member

2023	**Machine Learning Seminar**, organizer and moderator of a weekly cross-department ML seminar in Bar-Ilan University
2022	**Machine Learning Seminar**, organizer and moderator of a weekly cross-department ML seminar in Bar-Ilan University

Peer Review

International Conference on Machine Learning (ICML), 2024
International Conference on Learning Representations (ICLR), 2023
Neural Information Processing Systems (NeurIPS), 2023
International Conference on Learning Representations (ICLR), 2022
Neural Information Processing Systems (NeurIPS), 2022
International Conference on Learning Representations (ICLR), 2021 (highlighted)
Neural Information Processing Systems (NeurIPS), 2021 (top 8%)
International Conference on Machine Learning (ICML), 2021
Neural Information Processing Systems (NeurIPS), 2020 (top 10%)
International Joint Conference on Artificial Intelligence (IJCAI), 2019