Amir Bar

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3883 Turquoise Way
Oakland, CA, 94609

EDUCATION

UC Berkeley, Berkeley, California — **August 2022 - Now**
Doctor of Philosophy, Computer Science
Visiting PhD Student
Host: Trevor Darrell (UC Berkeley).

Tel Aviv University, Tel Aviv, Israel — **July 2020 - Now**
Doctor of Philosophy, Computer Science
Third Year PhD Student
Advisors: Amir Globerson and Trevor Darrell (UC Berkeley).
GPA: 93/100

Tel Aviv University, Tel Aviv, Israel — **2015 - 2017**
Master of Science, Computer Science
Advisor: Lior Wolf.
GPA: 91/100

Tel Aviv University, Tel Aviv, Israel — **2012 - 2015**
Bachelor of Science, Computer Science
Magna Cum Laude
GPA: 90/100

INTERESTS

Visual Prompting, Self-Supervised Learning, Object-Centric models

PREPRINTS

Amir Bar, Arya Bakhtiar, Antonio Loquercio, Jathushan Rajasegaran, Danny Tran, Yann LeCun, Amir Globerson, Trevor Darrell. "EgoPet: A pet's-eye view of the world for learning animal behavior". *In submission.* 2023.

Yutong Bai, Xinyang Geng, Karttikeya Mangalam, **Amir Bar**, Alan Yuille, Trevor Darrell, Jitendra Malik, Alexei A Efros. "Sequential Modeling Enables Scalable Learning for Large Vision Models". *In submission.* 2023.

Jiarui Xu, Yossi Gandelsman, **Amir Bar**, Jianwei Yang, Jianfeng Gao, Trevor Darrell, Xiaolong Wang. "IMProv: Inpainting-based Multimodal Prompting for Computer Vision Tasks". *In submission.* 2023.

Amir Bar, Florian Bordes, Assaf Shocher, Mahmoud Assran, Pascal Vincent, Nicolas Ballas, Trevor Darrell, Amir Globerson, and Yann LeCun. "Predicting masked tokens in stochastic locations improves masked image modeling." *In submission.* 2023.

Dantong Niu, **Amir Bar**, Roei Herzig, Trevor Darrell, Anna Rohrbach. "Object-based (yet Class-agnostic) Video Domain Adaptation." *In submission.* 2023.

CONFERENCE PUBLICATIONS

Amir Bar*, Yossi Gandelsman*, Trevor Darrell, Amir Globerson, Alexei Efros. "Visual Prompting via Image Inpainting." *In Advances in Neural Information Processing Systems (NeurIPS).* 2022.

Amir Bar, Xin Wang, Vadim Kantorov, Colorado J Reed, Roei Herzig, Gal Chechik, Anna Rohrbach, Trevor Darrell, and Amir Globerson. "DETReg: Unsupervised Pretraining with Region Priors for Object Detection." *In Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR).* 2022.

Elad Ben-Avraham, Roei Herzig, Karttikeya Mangalam, **Amir Bar**, Anna Rohrbach, Leonid Karlinsky, Trevor Darrell, Amir Globerson. "Bringing Image Scene Structure to Video via Frame-Clip Consistency of Object Tokens." *In In Advances in Neural Information Processing Systems (NeurIPS).* 2022.

Roei Herzig, Elad Ben-Avraham, Karttikeya Mangalam, **Amir Bar**, Gal Chechik, Anna Rohrbach, Trevor Darrell, Amir Globerson. "Object-Region Video Transformers." *In Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. 2022.

Raouf Muhamedrahimov, **Amir Bar**, and Ayelet Akselrod-Ballin. "Learning Interclass Relations for Intravenous Contrast Phase Classification in CT." *In Medical Imaging with Deep Learning (MIDL)*. 2021.

Amir Bar*, Herzig, Roei*, Xiaolong Wang, Anna Rohrbach, Gal Chechik, Trevor Darrell, and Amir Globerson. "Compositional Video Synthesis with Action Graphs." *Proceedings of the 38th International Conference on Machine Learning (ICML)* 2021.

Herzig, Roei*, **Amir Bar***, Huijuan Xu, Gal Chechik, Trevor Darrell, and Amir Globerson. "Learning Canonical Representations for Scene Graph to Image Generation." *In European Conference on Computer Vision (ECCV)*. 2020.

David Chettrit, Tomer Meir, Hila Lebel, Mila Orlovsky, Ronen Gordon, Ayelet Akselrod-Ballin, **Amir Bar**. "3D Convolutional Sequence to Sequence Model for Vertebral Compression Fractures Identification in CT." *In Medical Image Computing and Computer Assisted Intervention (MICCAI)*. 2020.

Ginosar Shiry*, **Amir Bar*** , Gefen Kohavi, Caroline Chan, Andrew Owens, and Jitendra Malik. "Learning Individual Styles of Conversational Gesture." *In Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. 2019.

Amir Bar, Michal Mauda Havakuk, Yoni Turner, Michal Safadi, and Eldad Elnekave. "Improved ich classification using task-dependent learning." *In IEEE 16th International Symposium on Biomedical Imaging (ISBI)*. 2019.

Ofir Press*, **Amir Bar***, Ben Bogin*, Jonathan Berant and Lior Wolf. "Language generation with recurrent generative adversarial networks without pre-training." *In the 1st Workshop on Learning to Generate Natural Language (ICMLW)*. 2017.

Amir Bar, Lior Wolf, Orna Bergman Amitai, Eyal Toledano and Eldad Elnekave. "Compression fractures detection on CT." *In Proceedings of SPIE Medical Imaging*. 2017.

JOURNAL PUBLICATIONS

Muhamedrahimov, Raouf, **Amir Bar**, Jonathan Laserson, Ayelet Akselrod-Ballin, and Eldad Elnekave. "Using machine learning to identify intravenous contrast phases on computed tomography." *In Computer Methods and Programs in Biomedicine 215*. 2022.

Noa Dagan, Eldad Elnekave, Noam Barda, Orna Bergman-Amitai, **Amir Bar**, Mila Orlovsky, Eitan Bachmat, Ran D. Balicer. "Automated opportunistic osteoporotic fracture risk assessment using computed-tomography scans to aid in FRAX underutilization". *In Nature Medicine*. 2020.

Krishnaraj, Arun, Spencer Barrett, Orna Bregman-Amitai, Michael Cohen-Sfady, **Amir Bar**, David Chettrit, Mila Orlovsky, and Eldad Elnekave. "Simulating dual-energy X-ray absorptiometry in CT using deep-learning segmentation cascade." *In Journal of the American College of Radiology*. 2019.

PATENTS

Amir Bar. "Systems and methods for automated detection of visual objects in medical images.". *U.S. Patent*. 2023.

Amir Bar. "Identification of a contrast phase depicted in a medical image ". *U.S.*

Patent. 2023.

Amir Bar, Raouf Muhamedrahimov, and Rachel Wities. "Cross modality training of machine learning models". *U.S. Patent*. 2023.

ACADEMIC TALKS

***M**asked **I**mage **M**odeling is Awesome*
Berkeley AI Research Computer Vision Workshop, December 2023

Compositional Video Synthesis with Action Graphs
Structured Representations for Video Understanding Workshop, ICCV 2021

Unsupervised Pretraining with Region Priors for Object Detection
Learning from Limited and Imperfect Data Workshop, CVPR 2021
Challenges for AI in Radiology
Hebrew University of Jerusalem, 2019
Medical Machine Learning Israel, 2019

AWARDS

Award for Student Excellence, Tel Aviv University. AY 2015 and AY 2016

EXPERIENCE

Meta AI Research: Research Intern **Sept. 23 - Feb. 24**
Animals are intelligent agents that plan and act to achieve complex goals
We propose EgoPet, a new pet egocentric dataset aimed at learning pets' intelligence
Working with Prof. Yann LeCun, Meta VP and an ACM Turing award laureate.

Meta AI Research: Research Intern **June 22 - Feb 23**
Modeling location uncertainty in Masked Image Modeling
To address this we proposed Stochastic Positional Embeddings (StoP)
Working with Prof. Yann LeCun, Meta VP and an ACM Turing award laureate.

Zebra Medical Vision: ML Team leader **Aug 18 - June 2022**
Founded a new team of four researchers with the objective of automating the analysis of CT scans. The algorithms we developed are currently employed on a daily basis in hospitals and have received FDA approval for clinical use.

Zebra Medical Vision: Research Scientist **Oct 16 - Aug 18**
Deep learning research for actue finding diagnosis in CT images
Developed "Zebra Train", a library for training deep neural networks built over Keras.

Tel Aviv University **May 16 - July 17**
Advised by Lior Wolf
Computer Vision research focused on diagnosis of clinical findings in CT images
Text generation project using Recurrent GANs

SAP: Software Engineer **Oct 14 - Oct 16**
Developed features in client and server in a cloud infrastructure team.
Group cyber secruity champion

SERVICE

Organizing Committee:

- Assistant Program Chair - NeurIPS 2023
- Organizer - First Workshop on Visual Prompting at CVPR 2024

Reviewer: CVPR, NeurIPS, ICCV, ECCV, TPAMI.
Admission Committee: UC Berkeley, 2023.