

Amir Bar

INFORMATION	Research Scientist Meta AI Research 380 W 33rd Street New York, NY 10001, USA	Email: amirb4r@gmail.com Homepage: amirbar.net Google Scholar: [link] GitHub: [link]
EDUCATION	Tel Aviv University , Tel Aviv, Israel <i>Doctor of Philosophy</i> , Computer Science Dissertation: From Task-Specific to General Self-Supervised Machine Vision Advisors: Amir Globerson and Trevor Darrell (UC Berkeley).	July 2020 - Aug 2024
	UC Berkeley , Berkeley, California Visiting PhD Student	Aug 2021 - Aug 2024
	Tel Aviv University , Tel Aviv, Israel <i>Master of Science</i> , Computer Science Advisor: Lior Wolf.	Oct 2015 - July 2017
	Tel Aviv University , Tel Aviv, Israel <i>Bachelor of Science</i> , Computer Science <i>Magna Cum Laude</i>	Oct 2012 - July 2015
RESEARCH EXPERIENCE	Meta AI Research: Research Scientist 380 W 33rd St, New York, NY 10001 Self-supervised learning, world modeling, and planning.	Aug 2025 - Now
	Meta AI Research: Postdoctoral Researcher 380 W 33rd St, New York, NY 10001 Working on self-supervised learning and world modeling. Host: Professor Yann LeCun, Meta VP and an ACM Turing award laureate.	Aug 2024 - Aug 2025
	Zebra Medical Vision: ML Team leader 2120 University Ave, Berkeley, CA 94704 Founded a new company site in Berkeley. Supported up to 8 scientists and engineers. Team goal: automate the reading of CT scans Four of our algorithms were approved by the US FDA Authored 3 patents and 7 research papers.	Aug 18 - June 22
	Zebra Medical Vision: Research Scientist Commercial Bldg, Shefayim, Israel Deep learning research for actue finding diagnosis in CT images Developed "Zebra Train", a library for training deep neural networks built over Keras. Authored 1 patent and 1 research paper.	Oct 16 - Aug 18
INTERESTS	Visual Prompting, Self-Supervised Learning, Object-Centric models	
CONFERENCE PUBLICATIONS	Yutong Bai*, Danny Tran*, Amir Bar* , Yann LeCun [†] , Trevor Darrell [†] , Jitendra Malik [†] . "Whole-Body Conditioned Egocentric Video Prediction." <i>In Advances in Neural Information Processing Systems (NeurIPS)</i> . 2025. Michal Golovanevsky*, William Rudman*, Michael Lepori, Amir Bar , Ritambhra Singh, Carsten Eickhoff. "Pixels Versus Priors: Controlling Knowledge Priors in Vision-Language Models through Visual Counterfactuals." <i>In Proceedings of the 2025 Conference on Empirical Methods in Natural Language Processing (EMNLP)</i> . 2025.	

David Fan*, Shengbang Tong*, Jiachen Zhu, Koustuv Sinha, Zhuang Liu, Xinlei Chen, Michael Rabbat, Nicolas Ballas, Yann LeCun, **Amir Bar**[†], Saining Xie[†]. “Scaling Language-Free Visual Representation Learning.” *In Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV)*. 2025. **Spotlight**.

William Rudman, Michal Golovanevsky, **Amir Bar**, Vedant Palit, Yann LeCun, Carsten Eickhoff, Ritambhara Singh. “Forgotten Polygons: Multimodal Large Language Models are Shape-Blind.” *The 63rd Annual Meeting of the Association for Computational Linguistics (ACL)*. 2025.

Grace Luo, Trevor Darrell, **Amir Bar**. “Vision-Language Models Create Cross-Modal Task Representations.” *Proceedings of the 42th International Conference on Machine Learning (ICML)*. 2025.

Amir Bar, Gaoyue Zhou, Danny Tran, Trevor Darrell, Yann LeCun. “Navigation World Models.” *In Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. 2025. **Best Paper, Honorable Mention**.

Alberto Hojel, Yutong Bai, Trevor Darrell, Amir Globerson, **Amir Bar**. “Finding Visual Task Vectors”. *In European Conference on Computer Vision (ECCV)*. 2024.

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 European Conference on Computer Vision (ECCV)*. 2024.

Amir Bar, Florian Bordes, Assaf Shocher, Mahmoud Assran, Pascal Vincent, Nicolas Ballas, Trevor Darrell, Amir Globerson, and Yann LeCun. “Stochastic positional embeddings improve masked image modeling.” *Proceedings of the 41th International Conference on Machine Learning (ICML)* 2024.

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 Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. 2024.

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 Pre-training 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*, Herzog, 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.

Herzog, 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 Chetrit, 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 classification using task-dependent learning.” *In IEEE 16th International Symposium on Biomedical Imaging (ISBI)*. 2019.

Ofir Press*, **Amir Bar***, Ben Beglin*, 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 Jiarui Xu, Yossi Gandelsman, **Amir Bar**, Jianwei Yang, Jianfeng Gao, Trevor Darrell, Xiaolong Wang. “IMProv: Inpainting-based Multimodal Prompting for Computer Vision Tasks”. *Transactions on Machine Learning Research (TMLR)*. 2024.

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 Chetrit, 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 Ronen Gordon, **Amir Bar**, Raouf Muhamedrahimov, Ayelet Akselrod-Ballin. “Identifying calcification lesions in contrast enhanced images.”. *U.S. Patent*. 2024.

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 Muhammedrahimov, and Rachel Wities. “Cross modality training of machine learning models”. *U.S. Patent*. 2023.

INVITED TALKS *Towards Real-World Models*

Princeton University, November 2025
Oxford University, September 2025
Meta AI Research (FAIR), June 2025
Imperial College London, March 2025
Johns Hopkins University, March 2025
Toyota Technological Institute at Chicago, February 2025
University of Washington, February 2025

Visual Prompting: Guiding Models to Perform Tasks With Pixels

Brown University, November 2024
Hebrew University of Jerusalem, July 2024
Weizmann Institute of Science, July 2024

From Task-Specific to General Machine Vision

Meta (FAIR), June 2024
NVIDIA AI, June 2024
ByteDance, June 2024

Masked Image Modeling is Awesome

Berkeley AI Research, 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

**HONORS &
AWARDS**

Best Paper, Honorable Mention. CVPR 2025
Blavatnik Prize for Computer Science Doctoral Fellows, 2025
Winner of the Ego4D PNR Temporal Localization Challenge, CVPR 2022
Award for Outstanding Academic Achievements, TAU CS (top 5%). 2016
Magna Cum Laude, BSc in Computer Science, Tel Aviv University, 2015
Award for Outstanding Academic Achievements, TAU CS (top 5%). 2015

SERVICE

Organizing Committee:

- Robust and Interactable World Models Workshop at ICCV 2025
- Primary Organizer - First Workshop on Visual Prompting at CVPR 2024
- Assistant Program Chair - NeurIPS 2023

Reviewer: CVPR, NeurIPS, ICML, ICCV, ECCV, TPAMI.

Admission Committee: UC Berkeley, 2023.