Dori Litvak

PhD Student · Computer Science · UT Austin

Austin, Texas

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Profile

I'm a PhD student at UT Austin. I build AI systems that model and reason about individual human behavior, with a focus on alignment, safety, and long-horizon decision-making. My research studies how personalized models can safely learn from and be exposed to unstructured personal data while preserving performance, remaining controllable, and robust to risks such as behavioral drift and over-delegation. I develop methods to model human cognitive state, decision patterns, communication, and intent, alongside evaluation frameworks that measure human alignment and reliability over time.

Education

University of Texas at Austin *Austin, TX*

Ph.D Computer Science *Fall 2023 - Current*

- Human behavior modeling: inferring decision patterns, cognitive state, and evolving goals from unstructured personal data, with a focus on uncertainty, and safety in delegating personal tasks.
- Alignment and evaluation: Personalized model behavior under evolving human context, with emphasis on rigorous evaluation across real-world scenarios.
- Human 4D reconstruction: reconstruct human motion from RGB videos, including articulated ego-centric pose modeling and dynamic camera reasoning.

Stanford University *Stanford, CA*

Visiting Student at Stanford Vision Lab *Fall 2022 - Summer 2023*

- Unsupervised 3D Reconstruction and Motion Generation for Animals in the wild
- co-author 3D-Fauna CVPR 2024, and Ponymation ECCV 2025

Ben-Gurion University of the Negev *Be'er Sheva, IL*

M.Sc. Computer Science - Summa cum laude *Fall 2020 - Spring 2023*

- Master's Thesis: Unsupervised Online Multiple Object Tracking

Ben-Gurion University of the Negev *Be'er Sheva, IL*

B.Sc. Computer Science *Spring 2017 - Spring 2020*

- Honors Thesis: Scalable dimensionality reduction for computer-vision background models
- co-authored a CVPR 2020 paper

Research Experience

Graduate Research Assistant *UT Austin*

Advisor: Prof. Leqi Liu *Oct. 2025 - Current*

- Designing a cognitive agentic architecture with modular plugins whose parameters evolve across interaction steps, enabling simulation of an explicit chain-of-thoughts of human cognition *HumanFold*, 2026 (preprint available soon).
- Modeling individual long-term decision-making and communication patterns from sparse, unstructured personal data. *ExMind*, 2026 (ongoing work).
- Identifying systematic behavioral and potentially harmful failures in personalized LLMs and developing evaluation methods to diagnose and correct misalignment with users' patterns.

Graduate Research Assistant *UT Austin*

Advisors: Prof. Georgios Pavlakos and Prof. Philipp Krähenbühl *Aug. 2023 - Aug. 2025*

- Supervised 4D Human motion reconstruction with expressive hands.
- WAVE: World And Camera View Aligned 4D Hand Motion Estimation.
- Reconstructing 4D hand motion under moving cameras by jointly encoding MANO hand pose parameters and SLAM cameras.

Visiting Student at Stanford Vision and Learning (SVL) Lab *Stanford*

Advisor: Prof. Jiajun Wu *Aug. 2022 - Jul 2023*

- Unsupervised 3D Reconstruction and Motion Generation for Animals in the wild
- Co-Developed 3D-Fauna, a large-scale animal image dataset and method for unsupervised learning of more than 100 different animal species using a semantic shape bank (CVPR 2024).
- Co-Developed Ponymation, a large-scale animal video dataset and generative method for learning and reconstructing realistic animal motion from in-the-wild videos using Motion VAE (ECCV 2025).

Research Assistant at the Vision Inference and Learning Group (VIL) *BGU*

Advisor: Prof. Oren Freifeld *Aug. 2020 - Jul. 2022*

- Unsupervised video understanding with applications such as multiple object tracking, super-pixels, and intrinsic image decomposition.
- Developed an unsupervised online multiple animal tracking method (CV4Animals CVPR 2022) using velocity-informed Gaussian Processes Regression for location modeling, and online visual topic modeling to model the appearance of objects.

Undergraduate Research Assistant at the Vision Inference and Learning Group (VIL) *BGU*

Advisor: Prof. Oren Freifeld *Jul. 2019 - Jul. 2020*

- Developed POLS: low-dimensional Partially Overlapping Local Subspaces for moving-camera background modeling.
- Co-Author, JA-POLS, CVPR 2020

Publications

Peer-Reviewed Conference Papers

Sun*, **Litvak***, Zhang, Li, Wu, and Wu. 2025. Ponymation: Learning Articulated 3D Animal Motions from Unlabeled Online Videos. In Proceedings of the European Conference on Computer Vision (ECCV).

Li*, **Litvak***, Li, Zhang, Jakab, Rupprecht, Wu, Vedaldi, Wu. 2024. Learning the 3D Fauna of the Web. In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition.

Chelly, Winter, **Litvak**, Rosen, and Freifeld. 2020. JA-POLS: A Moving-Camera Background Model via Joint Alignment and Partially-Overlapping Local Subspaces. In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition.

Peer-Reviewed Workshop Publications

Sun*, **Litvak***, Zhang, Li, Wu, and Wu. 2024. Ponymation: Learning Articulated 3D Animal Motions from Unlabeled Online Videos. **Oral Presentation** CV4Animals Workshop at CVPR 2024.

Li*, **Litvak***, Li, Zhang, Jakab, Rupprecht, Wu, Vedaldi, Wu. 2024. Learning the 3D Fauna of the Web. Women in Computer Vision (WiCV) Workshop at CVPR 2024.

Litvak, Dinari, and Freifeld. 2022. Unsupervised Online Multiple Animal Tracking. CV4Animals Workshop at CVPR 2022.

Chelly, Winter, **Litvak**, Rosen, and Freifeld. 2020. JA-POLS: A Moving-Camera Background Model via Joint Alignment and Partially-Overlapping Local Subspaces. Women in Computer Vision (WiCV) Workshop at CVPR 2020.

Awards, Fellowships, & Grants

2024 **Travel Award**, Women in Computer Vision (WiCV)
2023 **Conference Grant**, Grace Hopper Conference (largest tech conference for women)
2022 **Graduate Student Research Excellence Award**, Ben-Gurion University of the Negev
2020 **A Travel Award**, Women in Computer Vision (WiCV)

Invited Talks

Dec 2024. **3D Reconstruction and Motion Priors**. Guest Lecture, Department Seminar, Ben-Gurion University.

Fall 2022. **Introduction to Finite Elements**. Guest Lecture, Introduction to Numerical Analysis, Ben-Gurion University.

Fall 2022. **Introduction to Deep Learning for Computer Vision**. Series of Guest Lectures, Computer Vision: Models, Learning and Inference, Ben Gurion University.

Spring 2021. **Introduction to Deep Learning for Computer Vision**. Series of Guest Lectures, Introduction to Graphical Models and Deep Learning, Ben Gurion University.

Spring 2021. **Introduction to Deep Learning for Computer Vision**. Series of Guest Lectures, Computer Vision: Models, Learning and Inference, Ben Gurion University.

Teaching Experience

Spring 2026	**CS 329E Elements of Data Visualization**, Teaching Assistant	*UT Austin*
Fall 2025	**CS 329E Elements of Data Visualization**, Teaching Assistant	*UT Austin*
Spring 2023	**Principles of Programming Languages**, Head of Teaching Assistant	*BGU, Remote*
Fall 2022	**Introduction to Numerical Analysis**, Teaching Assistant	*BGU*
Spring 2021	**Computer Vision: Models, Learning and Inference**, Teaching Assistant	*BGU*
Spring 2020	**Principles of Programming Languages**, Teaching Assistant	*BGU*

Outreach & Professional Development

Reviewer: UAI, ECCV, ICCV, IJCV, CVPR, NeurIPS, CV4Animals, 3DV.

Spring 2023. QueenB Academic Mentor. QueenB is a non-profit organization dedicated to increasing the number of women in the Israeli academic and tech industries.

Fall 2020 - Spring 2021. Tutor, Dean of Students Office, Ben Gurion University of the Negev.
Volunteered at the Academic Assistance Unit of the Dean's office, tutoring seven students with disabilities in an effort to help them actualize their full academic potential and persevere through obstacles they faced.