Morris Alper, Ph.D.
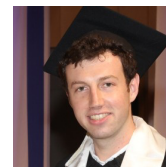
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I research creative multimodal machine learning inspired by linguistics — how structures encoded by language provide a tool for interpreting and controlling modalities such as vision and audio, ML as a creativity aid, and innovative methods for low-resource languages.

Education

2023 – 2025 **Ph.D., Tel Aviv University** Electrical Engineering (Machine Learning)
Advisors: *Dr. Hadar Averbuch-Elor, Dr. Raja Giryes*
Dissertation: *Multimodal Learning for High-Level Semantic Understanding: From Interpretability to Real-World Applications*

2019 – 2023 **M.Sc. (cum laude), Tel Aviv University** Computer Science
Advisor: *Dr. Hadar Averbuch-Elor*
Thesis: *Learning Human-Human Interactions in Images with Weak Textual Supervision*
GPA: 98 / 100

2012 – 2016 **B.Sc., Massachusetts Institute of Technology (MIT)** Linguistics and Mathematics (dual major).
GPA: 4.9 / 5

Employment History

2025 – ongoing **Research Analyst (Postdoctoral),** Carnegie Mellon University.
Advisor: *Dr. Lori Levin*
Developing machine learning methods for endangered language documentation.

2024 **Research Scientist Intern,** Meta.
Developing 3D generative models using weakly-structured image collections.

2019 – 2023 **Data Science Lead and Lecturer,** Israel Tech Challenge.
Designed syllabus, wrote, and delivered lectures on data science to industry professionals.

2019 – 2021 **NLP Data Scientist,** Pipl, Inc.
Designed information extraction algorithms for unstructured textual web data.

2018 – 2019 **NLP Data Scientist,** Reverso-Softissimo.
Designed NLP algorithms to automatically correct and enrich linguistic data.

2017 – 2018 **Software Developer,** K Dictionaries.
Managed API for lexicographic data, and developed algorithms for data enrichment

2015 – 2016 **Software and Algorithm Developer,** Voiceitt.
Prototyped speech recognition algorithms and integrated them into the company's API.

2016 **Algorithm Development Intern,** SECOM.
Developed algorithms for improved facial recognition.

2012-2015 **Undergraduate Research in Cognitive Linguistics,** TedLab, MIT.
Analyzed psycholinguistic survey data to study cognition and language.

Research Publications

* indicates equal contribution.

Peer-Reviewed Conference Papers

1. **Morris Alper**, David Novotny, Filippos Kokkinos, Hadar Averbuch-Elor, Tom Monnier. WildCAT3D: Appearance-Aware Multi-View Diffusion in the Wild. *NeurIPS*, 2025.

2. Rachel Mikulinsky*, **Morris Alper***, Shai Gordin, Enrique Jiménez, Yoram Cohen, Hadar Averbuch-Elor. ProtoSnap: Prototype Alignment For Cuneiform Signs. *ICLR*, 2025.

3. Keren Ganon*, **Morris Alper***, Rachel Mikulinsky1, Hadar Averbuch-Elor. WAFFLE: Multimodal Floorplan Understanding in the Wild. *WACV*, 2025. *(Oral)*

4. **Morris Alper** and Hadar Averbuch-Elor. Emergent Visual-Semantic Hierarchies in Image-Text Representations. *Proceedings of the European Conference on Computer Vision (ECCV)*, 2024. *(Oral)*

5. Moran Yanuka, **Morris Alper**, Hadar Averbuch-Elor, Raja Giryes. ICC : Quantifying Image Caption Concreteness for Multimodal Dataset Curation. *ACL (Findings)*, 2024.

6. Chen Dudai*, **Morris Alper***, Hana Bezalel, Rana Hanocka, Itai Lang, and Hadar Averbuch-Elor. HaLo-NeRF: Learning Geometry-Guided Semantics for Exploring Unconstrained Photo Collections. *Proceedings of the Eurographics Conference (EG)*, 2024.

7. **Morris Alper** and Hadar Averbuch-Elor. Kiki or Bouba? Sound Symbolism in Vision-and-Language Models. *Advances in Neural Information Processing Systems (NeurIPS)*, 2023. *(Spotlight)*

8. **Morris Alper** and Hadar Averbuch-Elor. Learning Human-Human Interactions in Images from Weak Textual Supervision. *Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV)*, 2023.

9. **Morris Alper***, Michael Fiman*, and Hadar Averbuch-Elor. Is BERT Blind? Exploring the Effect of Vision-and-Language Pretraining on Visual Language Understanding. *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2023.

Workshop and Non-Peer-Reviewed Papers

1. **Morris Alper**, Samopriya Basu, Nathan Bennett, Ryan Kessler, S Verlaine Ravana, Wendy F. K'ah Skáahluwaa Todd. Towards Low-Resource Text-to-Speech Generation for Indigenous Pacific Northwest Languages: The Case of Haida Xaad Kíl. *International Conference on Salish and Neighboring Languages (ICSNL)*, 2025.

2. Shai Gordin, **Morris Alper**, Avital Romach, Luis Saenz Santos, Naama Yochai, Roey Lalazar. CuReD: Deep Learning Optical Character Recognition for Cuneiform Text Editions and Legacy Materials. *Proceedings of the 1st Workshop on Machine Learning for Ancient Languages (ML4AL)*, 2024.

3. **Morris Alper**. Auto-generating Bilingual Dictionaries: Results of the TIAD-2017 Shared Task Baseline Algorithm. *LDK Workshops*, 2017.

Preprints and Under Review

1. **Morris Alper***, Moran Yanuka*, Raja Giryes, Gašper Beguš. ConlangCrafter: Constructing Languages with a Multi-Hop LLM Pipeline. 2025.

2. Yakov Kolani, Maxim Melichov, Cobi Calev, **Morris Alper**. Phonikud: Hebrew Grapheme-to-Phoneme Conversion for Real-Time Text-to-Speech. 2025.

3. Shahaf Pruss*, **Morris Alper***, Hadar Averbuch-Elor. Dynamic Scene Understanding from Vision-Language Representations. 2025.

Teaching Experience

Fall 2025	**Human Language for Artificial Intelligence**, teaching assistant, Carnegie Mellon University.
Fall 2023	**Digital Signal Processing**, teaching assistant, Tel Aviv University.

Teaching Experience (continued)

2019 – 2023 **Data Science Lead and Lecturer**, Israel Tech Challenge.
- Designed syllabus spanning fundamentals (data analysis, machine learning basics) through advanced topics (deep learning, NLP, computer vision)
- Lectured on data science and machine learning to diverse industry professionals across multiple cohorts
- Mentored student capstone projects in technical implementation and communicating results
- Achieved strong student evaluations (consistently above 6.0 on 7-point scale)

Miscellaneous Experience

Presentations and Interviews

2024 ▶ IMVC 2024 presentation on "Kiki or Bouba?" NeurIPS 2023 paper

🔊 Radio interview for Kan Tarbut program on VLM sound symbolism research (46:30-60:00, Hebrew language)

Awards and Achievements

2011 **International Linguistics Olympiad**, first place internationally (both individual and team rounds), best solution (problem 2), Zhurinsky Memorial Prize.

2009 **International Linguistics Olympiad**, honorable mention (individual round), first place in team round.

2008 **International Linguistics Olympiad**, tied for 6th place individual round (silver medal).

Peer Review Service

2025 SIGGRAPH, NeurIPS (Top Reviewer), ICLR, ACL ARR

2024 COLM, NeurIPS, ACML, ICLR

Languages

English (native), **Hebrew** (professional), **French** (upper intermediate)

References

Available upon request