DANIEL SHALAM

Ph.D. Candidate in Computer Science — Computer Vision & Multimodal AI Research

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https://scholar.google.com/citations?user=Ffu2TCkAAAAJ Google Scholar

*Ph.D. candidate researching **multimodal alignment and representation learning**. My current work focuses on flow-based alignment of independent vision and text encoders, extending earlier M.Sc. research on low-shot and self-supervised representation learning. Published at **ICML, ECCV, and BMVC**; passionate about scalable and efficient learning for foundation models.*

EDUCATION

Ph.D. in Computer Science

University of Haifa

Oct 2024 – Present

- Research Topic: *Flow-Based Alignment of Uni-Modal Vision and Text Encoders*
- Supervisor: Dr. Simon Korman

M.Sc. in Computer Science

University of Haifa

Oct 2022 – Oct 2024

- Thesis: *The Balanced-Pairwise-Affinities Feature Transform*
- Thesis Grade: 98.0 (Dean's List)

B.Sc. in Computer Science

University of Haifa

Graduated Aug 2022

AWARDS & HONORS

Bloom School of Advanced Studies Excellence Scholarship
340,000 NIS, Ph.D. program

Dean's List
M.Sc. Program

Oral Presentation
Israel Computer Vision Day 2024

TECHNICAL SKILLS

Few-Shot Learning | Self-Supervised Learning | Representation Learning | Computer Vision | Diffusion | Multi-Modal | Transformers

Python | PyTorch | TensorFlow | OpenCV | NumPy | MATLAB | Git | Linux | Weights & Biases | Slurm

ADDITIONAL INFO

- **Languages:** English (Fluent), Hebrew (Native)
- Completed full military service (IDF).

PUBLICATIONS

- **Daniel Shalam**, Simon Korman. *Unsupervised Representation Learning by Balanced Self-Attention Matching*. **ECCV 2024**, Milan, Italy.
- **Daniel Shalam**, Simon Korman. *The Balanced-Pairwise-Affinities Feature Transform*. **ICML 2024**, Vienna, Austria.
- **Daniel Shalam**, Elie Abboud, Roee Litman, Simon Korman. *MFSC: Matching by Few-Shot Classification*. **BMVC 2023**, Aberdeen, UK.

RESEARCH EXPERIENCE

Ph.D. Researcher, Computer Vision Lab

University of Haifa

2024 – Present

- Designing flow-based frameworks for **alignment of uni-modal encoders** under low-shot regimes.
- Exploring **contrastive and diffusion-based objectives** for cross-modal embedding consistency.

M.Sc. Researcher, Computer Vision Lab

University of Haifa

2022 – 2024

- Proposed **BAM (Balanced-Attention-Matching)** for unsupervised visual recognition by aligning self-attention representations across images.
- Developed **BPA (Balanced-Pairwise-Affinities)**, a training-free optimal transport feature transform improving transductive few-shot classification.
- Introduced **MFSC (Matching by Few-Shot Classification)** for visual correspondence under low-label and domain-limited regimes.
- Published first-author papers at **ECCV**, **ICML**, and **BMVC**.

Teaching Assistant

University of Haifa

2022 – 2024

- Assisted in undergraduate *Computer Vision* course.
- Mentored students in deep learning using **PyTorch** and **TensorFlow**.