

Nimrod Shabtay - Curriculum Vitae

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Education

- **2022 - Present: PhD (Direct Track) in Electrical Engineering, Tel-Aviv University**
Specializing in Multimodal Foundation Models: Evaluation, Adaptation, and Improvements.
Supervised by Prof. Raja Giryes
Current GPA: 92/100
- **2012 - 2016: B.Sc. in Electrical Engineering, Tel-Aviv University**
Expertise in Image Processing, Computers and Bio-Imaging
Final GPA: 85/100.
Final Project: Real Time algorithm for rectification of stereo images, 98

Professional Experience

- **2024 - Present: Research Intern, IBM Research**
Research Focus: Overcoming Critical Challenges Towards Reliable, Enhanced, and Efficient Vision-Language Models
Conducting research on multi-modal foundation models that integrate vision, language, and speech capabilities, with focus on achieving reliability, enhanced performance, and computational efficiency. Work emphasizes developing robust evaluation methodologies for assessing model trustworthiness, enhancing context-aware visual reasoning capabilities, and advancing speech-vision integration. Contributing to efficient inference techniques and exploring novel training approaches that balance model performance with practical deployment constraints.
- **2023: Summer Research Intern, IBM Research**
Enhancing visual reasoning with structured in-context learning: Converting images to structured data for Code-LLM-based reasoning with RAG-enhanced representations.
- **2018 - 2023: Senior Computer Vision Algorithm Developer, Nanit**
- Lead researcher for end-to-end development of deep learning models in a variety of computer vision tasks such as object detection, image classification, and pose estimation
- Lead developer of a real-time computer vision system monitoring breathing movement - from PoC to code implementation on an edge device
- **2014 - 2018: Computer Vision Algorithm Developer, CEVA-DSP**
- Designed and implemented algorithms for various IP/CV tasks, from initial design to hardware specific implementation. Mainly focused on detection, tracking, SLAM, 2D/3D registration, model estimation for applications such as low-light imaging and image stabilization
- Research and development of Gradient-Boost Tree module for real-time validating registrations
- Developed an optimized driver for CNN accelerator

Military Service

- **2004 - 2011: Naval Officer, Electronic Department, Israel Defense Force (IDF)**
Rank: Major (reserve), Regiment: Navy
- Management of a team of 30 staff members in various fields of electronics, such as radar, communications, optics, electronic warfare, control systems and electricity
- Promoted to tech lead of the above fields at the fleet HQ

Programming and Software Knowledge

Python, C/C++, Matlab, PyTorch, Linux and open-source software

Languages

Hebrew (Native), English (Professional)

Publications

- **CARES: Context-Aware Resolution Selector for VLMs**
Moshe Kimhi*, **Nimrod Shabtay***, Raja Giryes, Chaim Baskin, Eli Schwartz. Under Review. [link](#)
- **Spoken question answering for visual queries**
Nimrod Shabtay*, Zvi Kons*, Avihu Dekel, Hagai Aronowitz, Ron Hoory, Assaf Arbelle. Inter-speech 2025. [link](#)
- **Advancing Speech Understanding in Speech-Aware Language Models with GRPO**
Avishai Elmakies, Hagai Aronowitz, **Nimrod Shabtay**, Eli Schwartz, Ron Hoory, Avihu Dekel. Under Review. [link](#)
- **Teaching VLMs to Localize Specific Objects from In-context Examples**
Sivan Doveh*, **Nimrod Shabtay***, Wei Lin, Eli Schwartz, Hilde Kuehne, Raja Giryes, Rogerio Feris, Leonid Karlinsky, James Glass, Assaf Arbelle, Shimon Ullman, M. Jehanzeb Mirza. ICCV 2025. [link](#)
- **LiveXiv – A Multi-Modal Live Benchmark Based on Arxiv Papers Content**
Nimrod Shabtay, Felipe Maia Polo, Sivan Doveh, Wei Lin, M. Jehanzeb Mirza, Leshem Chosen, Mikhail Yurochkin, Yuekai Sun, Assaf Arbelle, Leonid Karlinsky, Raja Giryes. ICLR 2025. [link](#)
- **Deep Phase Coded Image Prior**
Nimrod Shabtay, Eli Schwartz, Raja Giryes. ICCP 2024. [link](#)
- **PIP: Positional-encoding Image Prior**
Nimrod Shabtay*, Eli Schwartz*, Raja Giryes. Under Review. [link](#)

Talks

- **April 2021** - Guest speaker at "Gradient Dissent": Deployment and Monitoring at Nanit.
- **June 2022** - Computer vision introduction to The Cognitive Neuropsychology Lab (PI Prof. Avishai Henik) - BGU

Blog-posts

- **May 2020** - How Nanit improves and develops models.
- **October 2020** Guidelines for building an accurate and robust ML/DL model in production