

Guy Bar-Shalom

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in Guy Bar-Shalom

🌐 <https://barsguy.github.io/>



Education

- 2022 – 2026 **PhD Computer Science.**
Technion - Israel Institute of Technology.
Advisors Prof. Ran El-Yaniv, and Prof. Haggai Maron.
My research focuses on Geometric Deep Learning, leveraging data symmetries to enhance model learning. I explore applications in graph neural networks and uncertainty estimation in both vision models and large language models.
- 2020 – 2022 **MSc Computer Science.**
Advisor Prof. Ran El-Yaniv.
Technion - Israel Institute of Technology.
Uncertainty Estimation in Vision Models.
- 2016 – 2020 **BSc Computer Science and Physics.**
Technion - Israel Institute of Technology.

Employment

- 2025 **Meta.**
Research Intern
Worked on weight space models (published at ICLR 2026)
- 2023 **Google-Verily.**
Research Intern
Worked on video analysis (published at WACV 2024)
- 2018 – present **Teaching assistant (Technion).**
Algorithms 1.
Partial differential equations and Fourier series.
Introduction to Computer Science - C.

Selected Publications (* indicates equal contribution)

- 2026 **A Graph Meta-Network for Learning on Kolmogorov–Arnold Networks**
Guy Bar-Shalom, Ami Tavory, Itay Evron, Maya Bechler-Speicher, Ido Guy, Haggai Maron (ICLR 2026)
- Neural Message-Passing on Attention Graphs for Hallucination Detection**
Fabrizio Frasca*, **Guy Bar-Shalom***, Yftah Ziser, Haggai Maron (ICLR 2026)
- FS-KAN: Permutation Equivariant Kolmogorov-Arnold Networks via Function Sharing**
Ran Elbaz, **Guy Bar-Shalom**, Yam Eitan, Fabrizio Frasca, Haggai Maron (ICLR 2026)
- On The Expressive Power of GNN Derivatives**
Yam Eitan, Moshe Eliasof, Yoav Gelberg, Fabrizio Frasca, **Guy Bar-Shalom**, Haggai Maron (ICLR 2026)

Selected Publications (* indicates equal contribution) (continued)

- 2025 ▀ Beyond Next Token Probabilities: Learnable, Fast Detection of Hallucinations and Data Contamination on LLM Output Distributions
Guy Bar-Shalom*, Fabrizio Frasca*, Derek Lim, Yoav Gelberg, Yftah Ziser, Ran El-Yaniv, Gal Chechik, Haggai Maron
(AAAI 2026)
A shorter version appeared @ Quantify Uncertainty and Hallucination in Foundation Models workshop @ ICLR 2025 (oral)
- 2025 ▀ Beyond Token Probes: Hallucination Detection via Activation Tensors with ACT-ViT
Guy Bar-Shalom*, Fabrizio Frasca*, Yaniv Galron, Yftah Ziser, Haggai Maron
(NeurIPS 2025)
- ▀ Balancing Efficiency and Expressiveness: Subgraph GNNs with Walk-Based Centrality
Joshua Southern, Yam Eitan, **Guy Bar-Shalom**, Michael M. Bronstein, Haggai Maron, Fabrizio Frasca
(ICML 2025)
- ▀ Topological Blindspots: Understanding and Extending Topological Deep Learning Through the Lens of Expressivity
Yam Eitan, Yoav Gelberg, **Guy Bar-Shalom**, Fabrizio Frasca, Michael M. Bronstein, Haggai Maron
Oral presentation
(ICLR 2025)
- 2024 ▀ A Flexible, Equivariant Framework for Subgraph GNNs via Graph Products and Graph Coarsening
Guy Bar-Shalom*, Yam Eitan*, Fabrizio Frasca, Haggai Maron
(NeurIPS 2024)
A shorter version appeared @ Symmetry and Geometry in Neural Representations workshop @ NeurIPS 2024 (oral) winning the best paper award
- ▀ Subgraphormer: Unifying Subgraph GNNs and Graph Transformers via Graph Products
Guy Bar-Shalom, Beatrice Bevilacqua, Haggai Maron
(ICML 2024)
- ▀ Weakly-supervised Representation Learning for Video Alignment and Analysis
Guy Bar-Shalom, George Leifman, Michael Elad
(WACV 2024)
- 2023 ▀ Window-Based Distribution Shift Detection for Deep Neural Networks
Guy Bar-Shalom, Yonatan Geifman, Ran El-Yaniv
(NeurIPS 2023)
- 2022 ▀ TransBoost: Improving the Best ImageNet Performance using Deep Transduction
Omer Belhasin*, **Guy Bar-Shalom***, Ran El-Yaniv
(NeurIPS 2022)

Awards

- 2025 ▀ Jacobs Qualcomm Excellence Scholarship
- ▀ Faculty Excellence Scholarship, Technion
- 2024 ▀ best paper award @ Symmetry and Geometry in Neural Representations workshop @ NeurIPS 2024
- ▀ VATAT Prize for Academic Excellence, Technion
- 2018 – present ▀ Teaching Assistant Excellence award (4 times).

Professional service

- 2024  Co-organizer of iGDL: Israeli Geometric Deep Learning workshop
- 2022-present  Reviewer at NeurIPS, ICML, ICLR

Teaching experience

- 2018 – present  Teaching Assistant at the Technion (department of Mathematics)
Course: *Partial Differential Equations and Fourier Series*
Average teaching score: 4.5/5.
- 2021 – present  Teaching Assistant at the Technion (department of Computer Science)
Course: *Algorithms 1*
Average teaching score: 4.6/5.
- 2021  Teaching Assistant at the Technion (department of Computer Science)
Course: *Introduction to Computer Science*
Average teaching score: 4.4/5.

Other

- 2012  Played in the NCAA basketball league (USA), at Mercyhurst University (Erie, PA)
- 2012 – present  Semi-pro basketball player in Israel
- 2013-2016  Israel Defense Forces (IDF), Staff Sergeant