

Leonid Popryho

popryho@gmail.com | popryho.com | linkedin.com/in/popryho | github.com/popryho | Google Scholar

RESEARCH EXPERIENCE

University of Illinois Chicago — HiPerCAS Lab

Chicago, IL, USA

Graduate Research Assistant (Ph.D.)

Aug 2023 – Present

- Research on machine learning for electronic design automation: generative and reinforcement-learning methods for physical design (global routing, Steiner trees), and physics-informed graph neural network surrogates that replace circuit, interconnect, and device simulation.
- Work published at ICCAD, ECTC, SNUG, and in IEEE TCAD, in collaboration with industry partners.

Argonne National Laboratory — X-ray Science Division

Lemont, IL, USA

Research Aide (Ph.D.)

May 2026 – Aug 2026

- Developed physics-informed surrogate models for cryogenic superconducting devices as part of a U.S. DOE Genesis Mission project.

EDUCATION

University of Illinois Chicago

Chicago, IL, USA

Doctor of Philosophy in Electrical and Computer Engineering

Aug 2023 – May 2028 (expected)

- Advisor: Prof. Inna Partin-Vaisband. Research area: machine learning for chip design.

Blekinge Institute of Technology & Kyiv Academic University

Sweden & Ukraine

Master of Science in Computer Science (dual degree)

Sep 2021 – Jul 2023

Igor Sikorsky Kyiv Polytechnic Institute

Kyiv, Ukraine

Bachelor of Science in Applied Mathematics

Sep 2017 – Jul 2021

WORK EXPERIENCE

Apple

Cary, NC, USA

Hardware Technology Intern

Sep 2024 – Jan 2025

- Developed real-time on-device machine learning models deployed in embedded firmware, including model compression and quantization for low-latency inference.

Receptor.ai

Kyiv, Ukraine

Machine Learning Engineer

Feb 2021 – Aug 2023

- Built generative models and property predictors for AI-driven drug discovery, including reinforcement-learning fine-tuning of molecular generators.

PUBLICATIONS

Author order as published; * equal contribution.

6. **L. Popryho**, A. Sadeghi, I. Partin-Vaisband, “Mesh-Native Physics-Informed Graph Surrogates for TCAD-in-the-Loop Design Space Exploration,” *IEEE/ACM International Conference on Computer-Aided Design (ICCAD)*, 2026.
5. M. Gharib*, **L. Popryho***, I. Partin-Vaisband, “From Physics to Surrogate Intelligence: A Unified Electro-Thermo-Optimization Framework for TSV Networks,” *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, 2026.
4. A. Sadeghi, **L. Popryho**, I. Partin-Vaisband, “PALTO: Physics-Informed Active Learning for Tri-Gate FinFET Design Optimization for Vertical Power Delivery,” *IEEE Electronic Components and Technology Conference (ECTC)*, 2026.
3. **L. Popryho**, A. Sadeghi, I. Partin-Vaisband, “Accelerating Sentaurus Device Exploration via Physics-Based Active Learning: Case Study in GaN FinFET Optimization,” *Synopsys Users Group (SNUG)*, 2026.
2. T. Voitsitskyi, V. Bdzhola, R. Stratiichuk, I. Koleiev, Z. Ostrovsky, V. Vozniak, I. Khropachov, P. Henitsoi, **L. Popryho**, R. Zhytar, S. Yesylevskyy, A. Nafiev, S. Starosyla, “Augmenting a Training Dataset of the Generative Diffusion Model for Molecular Docking with Artificial Binding Pockets,” *RSC Advances*, 2024.
1. T. Voitsitskyi, R. Stratiichuk, I. Koleiev, **L. Popryho**, Z. Ostrovsky, P. Henitsoi, I. Khropachov, V. Vozniak, R. Zhytar, D. Nechepurenko, S. Yesylevskyy, A. Nafiev, S. Starosyla, “3DProtDTA: A Deep Learning Model for Drug–Target Affinity Prediction Based on Residue-Level Protein Graphs,” *RSC Advances*, 2023.