	Odelia Melamed Ramat Gan, Israel • +972-547-989806 • born in 1991 odelia.melamed@weizmann.ac.il	
RESEARCH INTEREST	Interested in Adversarial Examples and the Neural Networks' properties that lead in the theoretic aspect, the geometric and algebraic properties of trained Neu to their architecture, the data set, and the training process. Interested in the adversarial examples and the nature of defense methods against these examples. low-dimensional data sets in high-dimensional input space, combine theory and app image classification networks and the low dimensional manifold of natural images.	to their existence ral Networks due transferability of Focus on implicit lied research using
EDUCATION	 Weizmann Institute Of Science, Rehovot, Israel PhD student in Computer Science, Supervised by Prof. Adi Shamir. Research of Neural Networks' response to adversarial examples, defenses, and transferabil Analyze geometric properties of Neural Networks in high-dimensional space using geometric Theoretic and applied research of the properties of Neural Networks' architecture and opti their vulnerability to adversarial examples. Programming in python, using Numpy, PyTorch and AdverTorch. 	Feb 2021 – Present ity. ic and algebraic tools. mization that leads to
	 Weizmann Institute Of Science, Rehovot, Israel M.Sc. in Computer Science, Supervised by Prof. Adi Shamir (GPA: 94.4). Research creating and detecting adversarial examples using geometric and algebraic tools. Analyze local and global behavior of SOTA image classification Neural Networks. 	2018 – 2021
	 Ben Gurion University of the Negev, Be'er Sheva, Israel B.Sc. in Computer Science and Mathematics (GPA: 91.5). Advanced Courses in Algebraic Structure, Galois Theory, Graph Theory, Number Theory, 	2015 – 2018 and Cryptography.
EXPERIENCE	 Microsoft, Cyber Security Group, Herzliya, Israel Data science intern in a Cyber Security defense team. Using Cyber Security background to design better Machine Learning guided defenses. Using data manifold realizations and methods to enhance the explainability of detection. 	Jun 2021 – Present
	 IDC, The Interdisciplinary Center Herzliya, Herzliya, Israel TA in Computers Networks, Complexity, and advanced algorithms courses Include weekly lectures in both English and Hebrew. 	2019 – 2020
	 NSO, Cyber Intelligence Group, Herzliya, Israel Researcher in the Android team Find software vulnerabilities using Black-box research and reverse engineering. 	2016 – 2018
	Cyber Education Center, Meitar, Israel Teaching computer networks and python, 11th grade. 	2015 - 2017
	 8200 unit, IDF, Israel Defense Forces, Israel Product Management Team Leader: include independent management of multidisciplinary Research: Long-term research projects. Initiate and operate a research team training programmed and prog	2010 – 2015 y research projects. ram.
PUBLICATIONS	The dimpled manifold model of adversarial examples in machine learning. Adi Shamir, Odelia Melamed, and Oriel BenShmuel. arXiv preprint arXiv:2106.10151 (2021)	
	 Adversarial Examples Exist in Two-Layer ReLU Networks for Low Dimensional Dat Odelia Melamed, Gilad Yehudai, and Gal Vardi. Neurips2023. Explaining High-Dimensional Text Classifiers Odelia Melamed, Rich Caruana. NeurIPS Explainability workshop XAIA 2023. 	2023 2023
VOLUNTEERING	Project MehamemetVolunteer teaching a crash course in App Development for female students in 9th grade.	2019
	 The Arab High School in Lod educational project of WIS Volunteer teaching Mathematics for final exams to the 12th grade in The Arab High School 	2019 – 2020 ol in Lod.
SKILLS	 Neural Networks training and manipulations using Numpy, PyTorch, and AdverTorch. Programming using C#, Java, Python. 	

- LANGUAGES Hebrew: Na
- Hebrew: Native language.English: Fluent (speaking, reading, writing).