

YONATHAN EDER

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in [Yoni Eder](#)

🏠 Ganey-Tikva, Israel

Ph.D. student at the Faculty of Math and Computer Science, Weizmann Institute of Science

M.Sc. Electrical and Computer Engineering, Ben-Gurion University

Proficient in Signal Processing and Contactless Physiological Sensing Using FMCW Radar

EDUCATION

2021-present: Doctor of Philosophy (Ph.D.), SAMPL lab, The Faculty of Mathematics and Computer Science | Weizmann Institute of Science, Rehovot, Israel

- Thesis: Non-Contact Physiological Sensing Using Radar, supervised by Prof. Yonina Eldar
 - Multi-person non-contact vital signs monitoring via FMCW radar (SISO,SIMO,MIMO)
 - RaLU-Net: Deep unfolded radar localization of humans
 - Non-invasive quantitative monitoring of Iron Oxide Nanoparticles Using mmWave Radar
 - Non-contact pulmonary function test in children
 - Non-contact vital signs monitoring during large movements via FMCW radar
- Doctoral fellowship in Data Science by the Israeli Council for Higher Education (CHE) via the Weizmann Data Science Research Center – won twice for both 2022-2023 and 2023-2024
- Speaker at the first TRANSLATIONAL AI AND ENGINEERING in Health and Communication workshop, Weizmann Institute of Science

2018-2020: Master of Science (M.Sc.), Electrical and Computer Engineering
| Ben-Gurion University, Beer-Sheva, Israel

- Thesis: Robust two-sample location testing via probability measure transform, supervised by Dr. Koby Todros
- Specialization in signal processing
- Speaker at the 6th annual Unsupervised Machine Learning Seminar, Afeka Tel-Aviv Academic College of Engineering

2014-2018: Bachelor of Science (B.Sc.), Electrical and Computer Engineering
| Ben-Gurion University, Beer-Sheva, Israel

- Major in computer engineering and electro-optics
 - Final undergraduate project: “Dynamic Search of Anomalies in Networks”
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MILITARY SERVICE

2011-2013: Combatant and UAV operator in “Rochev Shamayim” unit, IDF

- Granted the unit’s “outstanding soldier” award

2011: Trainee in the Air-Force pilot course

PROGRAMMING LANGUAGES

- MATLAB, Python, C
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SPOKEN LANGUAGES

- Hebrew: Mother tongue
 - English: Fluent (verbal and writing)
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GOOGLE SCHOLAR PROFILE

PUBLICATIONS - JOURNALS

- Y. Eder, E. Zagoury, S. Savariego, M. Namer, O. Cohen and Y. C. Eldar, "Robust Phantom-Assisted Framework for Multi-Person Localization and Vital Signs Monitoring Using MIMO FMCW Radar", arXiv preprint arXiv:2501.06755 (2025) (Ph.D.)
 - Y. Eder and Y. C. Eldar, "Sparsity-Based Multi-Person Non-Contact Vital Signs Monitoring Via FMCW Radar," IEEE Journal of Biomedical and Health Informatics, vol. 27, no. 6, pp. 2806-2817, June 2023 (Ph.D.)
 - Y. Eder and K. Todros, "Robust Two-Sample Location Testing via Probability Measure Transform," IEEE Transactions on Signal Processing, vol. 69, pp. 4724-4739, 2021 (M.Sc.)
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PUBLICATIONS - CONFERENCES

- Y. Eder, Y. Kvich, R. Guo and Y. C. Eldar, "RaLU-Net: Deep Unfolded Radar Localization of Humans for Precise Non-Contact Vital Signs Monitoring," to appear in IEEE ICASSP 2025 (Ph.D.)
 - R. Guo, Y. Eder, Y. Kvich and Y. C. Eldar, "Non-Contact Vital Signs Monitoring of Multiple Moving People Via FMCW Radar," submitted to IEEE EMBC 2025 (Ph.D.)
 - Y. Eder, R. Abel, A. Schroeder and Y. C. Eldar, "Localization and Tracking of Gold Nanoparticles Using mmWave FMCW Radar," IEEE ICASSP 2024, pp. 2066-2070 (Ph.D.)
 - H. Naaman, D. Bilik, Y. Eder and Y. C. Eldar, "Efficient ECG Reconstruction and Heart Rate Monitoring Using Time-Based Sampler," IEEE COMCAS 2024, pp. 1-5 (Ph.D.)
 - T. Sharon, H. Naaman, Y. Eder, and Y. C. Eldar, "Real-Time Quantitative Ultrasound and Radar Knowledge-Based Medical Imaging." Medical Imaging with Deep Learning conference, Nashville, USA, 2023 (Ph.D.)
 - Y. Eder, Z. Liu and Y. C. Eldar, "Sparse Non-Contact Multiple People Localization and Vital Signs Monitoring Via FMCW Radar," IEEE ICASSP 2023, pp. 1-5 (Ph.D.)
 - R. Abel, Y. Eder, Y. C. Eldar and A. Schroeder "Radar Detection of Gold Nanoparticles for Deep Brain Imaging", ISBUS 2022, Pasadena, CA, December 2022 (Ph.D.)
 - Y. Eder and K. Todros, "Measure-Transformed Two-Sample Hotelling Test," IEEE 8th CAMSAP International Workshop, Le Gosier, Guadeloupe, pp. 256-260, 2019. (M.Sc.)
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PATENTS

- Y. Eder and Y.C. Eldar, "SYSTEM AND METHOD FOR NON-CONTACT PEOPLE LOCALIZATION AND VITAL SIGNS MONITORING VIA FMCW RADAR", patent pending, submitted, 2022
 - Y. Eder, R. Abel, A. Schroeder and Y.C. Eldar, "SYSTEM AND METHOD FOR BIOLOGICAL DEEP-TISSUE IMAGING", patent pending, submitted, 2022
 - Y. Eder, Y. Kvich and Y. C. Eldar, "RaLU-Net: Deep Unfolded Radar Localization of Humans," patent pending, submitted, 2024
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