**Dr. Refael Barkan (Barak)** is head of Research, Innovation and International Ventures at Holon Institute of Technology (HIT.) Dr. Barkanis a Neurologist (M.D.) and a Brain Scientist (Ph.D.) and also holds a Master's degree (M.Sc.) in Computer Science. His current areas of interest are: ICT platforms for detection and intervention (neurocognitive training) in early stages of dementia, healthcare informatics, medical data mining and process mining, clinical decision support tools and telemedicine. He has been involved in various national and international R&D projects and initiatives, including EU grants (FP7, Horizon-2020), especially those that focus on active and healthy living and technologies for the elderly. Dr. Barkan is an associate editor of Healthcare Technology Letters, a fully open access journal, focusing on the most recent advances within a wide scope of disciplines, encompassing biomedical engineering, and computer and information science for healthcare.

Dr. Barkanhas founded, together with academic and industrial partners, several multidisciplinary R&D centers and labs at HIT, including the multidisciplinary cyber center, the CARE center, Multi-assistive Design Lab and several startup companies in the field of Digital Health. He is also involved in the following R&D and Clinical Projects:

* Patterns of patients' interactions with the healthcare organization and their impacts on health quality measurements
* eAVATAR as a digital companion to the older individual and to (chronic) patient in general
* Semantic data layers on top of EMRs for efficient management of multimorbidity and comorbidities
* Relation between gain in cognition during rehabilitation on functional outcome among hip fracture adult patients with and without pre-hip fracture dementia
* Computerized model for objectively evaluating cutting performance using a laparoscopic box trainer simulator
* Automatic categorization of diabetic patients
* Risk and Disaster Management in Medicine: from Planning and Expertise to Smart, Intelligent, and Adaptive Systems
* New academic program for B.Sc. In Digital Medical Technologies (founder)

Recent publications:

* Amir Handelman, Shani Schnaider, Adva Schwartz‑Ossad, Refael Barkan, Ronnie Tepper, "Computerized model for objectively evaluating cutting performance using a laparoscopic box trainer simulator", Surgical Endoscopy, <https://doi.org/10.1007/s00464-018-6598-x>, November 2018.
* Mizrahi EH, Harel N, Heymann AD, Lubart E, Leibovitz A, Malik Gadot E, Barkan R, "The relation between gain in cognition during rehabilitation on functional outcome among hip fracture adult patients with and without pre- hip fracture dementia", [Arch Gerontol Geriatr.](https://www.ncbi.nlm.nih.gov/pubmed/30006209) 2018 Sep - Oct; 78:177-180. doi: 10.1016/j.archger.2018.06.016. Epub 2018 Jun 30.
* Arriel Benis, PhD; Nissim Harel, PhD; Refael Barak Barkan, MD, PhD; Einav Srulovici, RN, MHA, PhD; Calanit Key, RN, MHA, "Patterns of Patients’ Interactions With the Health Care Organization and Their Impacts on Health Quality Measurements: Study Protocol", JMIR RESEARCH PROTOCOLS, JMIR Res Protoc 2018;7(11):e10734) doi:10.2196/10734.
* R. Barkan, H. Lewy, "Special Issue: Addressing Age-related conditions: Technologies for early detection, monitoring and intervention", Healthcare Technology Letters June 2017.
* Ran Dubin, Ofer Hadar, Yariv Freifeld, Aviv Ruham, Amit Dvir, Nissim Harel, Refael Barkan, "[Hybrid clustered peer-assisted DASH-SVC system](https://ieeexplore.ieee.org/abstract/document/7363295/)", Computer and Information Technology; Ubiquitous Computing and Communications; Dependable, Autonomic and Secure Computing; Pervasive Intelligence and Computing (CIT/IUCC/DASC/PICOM), 2015 IEEE International Conference.
* M.J. Rapoport, N. Harel, Y. Shasha, R. Barkan Barak, E. Kitaee, A. Buchs, S. Izhakian, A. Aviel. "Partial Achievement of Diabetes Goals in Real Life Setting and Chronic Complications", Primary Diabetes Care, April 2015.
* R. Dubin, A. Dvir, O. Hadar, N. Harel, R. Barkan Barak, "Multicast Adaptive Logic for Dynamic Adaptive Streaming over HTTP Network", IEEE 12th Consumer Communications and Networking Conference (CCNC), 2015.