TERA
Technion-Rambam Initiative in Medical AI

TECHNION
Israel Institute of Technology

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Health Care Campus

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Monthly Seminar Series

AI & Ophtalmology - A Revolution

Planning

Wednesday 16.11
Auditorium 201, Floor 2,
Biomedical Engineering,
Silver building
@ Technion

12:30: Prof. Eytan Blumenthal and Dr. Hadas Pizem
13:00: Break networking (pizza)
13:30: Dr. Joachim A. Behar

Abstract

Recent advances in deep learning combined with the increased availability of medical data in digital format have led to tremendous success in the medical domain. Deep learning has been used in different sub domains such as: medical imaging, bioinformatics, omics, radiology etc. and shown promising results. In ophthalmology, deep learning techniques have been applied to Digital Fundus Images (DFI) and optical coherence tomography (OCT) achieving high performance in detecting diabetic retinopathy, glaucoma and macular edema. Furthermore, doctor referral recommendation has been predicted by using OCT scans, and refractive error has been predicted using DFIs. The human eye is an open window into the body in that it provides us a unique opportunity to non-invasively visualize an extension of the central nervous system via the retina as well as the microvasculature. In this talk we will review and present original research on leveraging AI to support the field of ophthalmology as well as leveraging eye images for the purpose of non-eye disease risk prediction, diagnosis and management.

Dr. Joachim A. Behar is heading the Artificial Intelligence in Medicine Laboratory (AIMLab.) at the Technion faculty of Biomedical Engineering, Haifa, Israel. The lab focuses on the usage of machine learning and deep learning in medicine within the context of physiological time series and images analysis in medical fields including cardiology, sleep medicine and ophthalmology. Dr. Behar is one of the founding directors of the Technion-Rambam Initiative in Medical AI (TERA). The purpose of TERA is to close the in-silico to bedside loop in medical AI. Dr. Behar is twice winner of the MIT-PhysioNet/Computing in Cardiology competition.

Prof. Eytan Blumenthal is the Chairman of the Department of Ophthalmology at the Rambam Health Care Campus. Prof. Blumenthal specializes in the treatment and surgery of difficult glaucoma and cataract cases. His major research interests include: glaucoma, studying diagnostic technology in glaucoma, and developing diagnostic and surgical devices. Amongst his research projects are the invention of a lens used for laser treatment after glaucoma surgery, and a device used during filtration surgery. Prof. Blumenthal is interested in AI in the field of DFI's and visual fields, as well as predictors of successful glaucoma and cataract surgery.

Click to confirm your participation (on site or via Zoom)

The seminar will be delivered in English