Name: **Eduard Durech**
SFU faculty/major: Applied Sciences/Biomedical Engineering
SFU email address: EDurech@SFU.ca

Title of presentation: AI to uncover what is inside us

Abstract

Artificial Intelligence (AI) and, more specifically, the subset of Machine Learning (ML) is used extensively in medicine to process, analyze, and help in diagnoses of many ailments and diseases. These tools, which find themselves in applications such as recommending videos or beating world-champions in chess, can also assist in visualizing what is in our bodies. Our lab focuses on ophthalmology and medical screening for eye diseases such as Diabetic Retinopathy (DR) - which is the leading cause of blindness in adults [1]. There is a common consensus that early screening and detection of DR is a key factor in its prevention; however, high-resolution scanning enabling such advancements is on the order of micrometres, which creates many challenges. One such challenge is the aberration of our signal - much like how people who need glasses see blurry images, our pictures can be corrupted while scanning through the lens of the eye. Methods exist to correct for these and I will show how Machine Learning can quickly and significantly improve the image quality from these scans by correcting for these aberrations.