

In collaboration with the Institute for Clinical and Experimental Medicine (IKEM) and leveraging their historical examination data, we developed a convolutional neural network trained to identify diabetic retinopathy from retinal images. The primary objective of this project was to establish a machine learning model applicable within the medical setting of IKEM, streamlining and potentially expediting the examination process. Additionally, we designed a user-friendly website to facilitate the straightforward utilization of the trained model by physicians possessing only basic computer skills. While the neural network demonstrates good results, it is crucial to underscore its restricted adaptability, attributed to the compact model size and the monotonic nature of ophthalmic data sourced from a specific type of fundus camera. The proposed solution is slated for testing in a real hospital operational environment. The neural network is not intended as a replacement for the physician, but as a tool that can assist the physician in diagnostic process.