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Intel-Powered AI solution combats diabetic vision loss

March 12, 2021 | News

Netra.AI, the cloud-based AI solution uses deep learning to identify retinal conditions accurately and quickly



Sankara Eye Foundation in India and Singapore-based Leben Care are deploying a comprehensive retina risk assessment software-as-a-service platform in India. Netra.AI, the cloud-based artificial intelligence (AI) solution, is powered by Intel® technology and uses deep learning to identify retinal conditions in a short span of time with the accuracy level of human doctors. Netra.AI can accurately identify diabetic retinopathy (DR), greatly reducing the screening burden on vitreoretinal surgeons.

“The use of AI to improve disease detection and prevention is a critical step for the healthcare industry and a giant leap for humankind. With Netra.AI, Sankara Eye Foundation and Leben Care have leveraged the power of Intel® Xeon® Scalable processors and built-in Intel® Deep Learning (DL) Boost to accurately detect DR and enable timely treatment to effectively combat avoidable vision impairment and blindness in diabetic patients” Prakash Mallya, vice president and managing director of Sales, Marketing and Communications Group, Intel India.

Sankara Eye Foundation and Leben Care are deploying Netra.AI, a comprehensive retina risk assessment software-as-a-service platform, in India. The cloud-based artificial intelligence solution is powered by Intel technology and uses deep learning to identify retinal conditions in a short span of time with the accuracy level of human doctors.

Dr. Kaushik Murali, president of Medical Administration, Quality & Education, Sankara Eye Foundation India said, “The current solution, Netra.AI — where we had a key role in the design and development with Leben Care — uses robust AI-enabled platforms from Intel.”

Netra.AI analyzes images from portable, technician-operated fundus camera devices, for immediate results of referable DR grading via a cloud-based web portal. The solution uses cutting-edge AI algorithms, developed in collaboration with leading retina experts, with a four-step deep convolutional neural network (DCNN). This neural network helps in detecting DR stage and annotating lesions based on pixel density in the fundus images. The solution can be expanded to other retinal conditions and glaucoma, helping to reduce the screening burden on healthcare specialists and focus key resources on patients who need immediate care and intervention.

So far, Netra.AI has screened 3,093 patients in India and identified 742 at-risk patients. The solution generates detailed reports within two minutes of uploading images and offers immediate and highly accurate diagnosis to help doctors provide instant counsel for patients needing a referral to the hospital. It is a powerful tool for screening retinal illnesses in large populations with limited infrastructure, resources and an overburdened healthcare system.

The Netra.AI solution is optimized for Intel Xeon Scalable processors with built-in Intel Deep Learning Boost and Intel® Advanced Vector Extension 512 acceleration. Intel® architecture delivers strong data protection, fast processing of large data volumes and service flexibility without any performance drawbacks. The solution provides users access to Intel-optimized images for TensorFlow, Apache MXNet and PyTorch, in addition to Intel® performance libraries, to further enhance application performance.