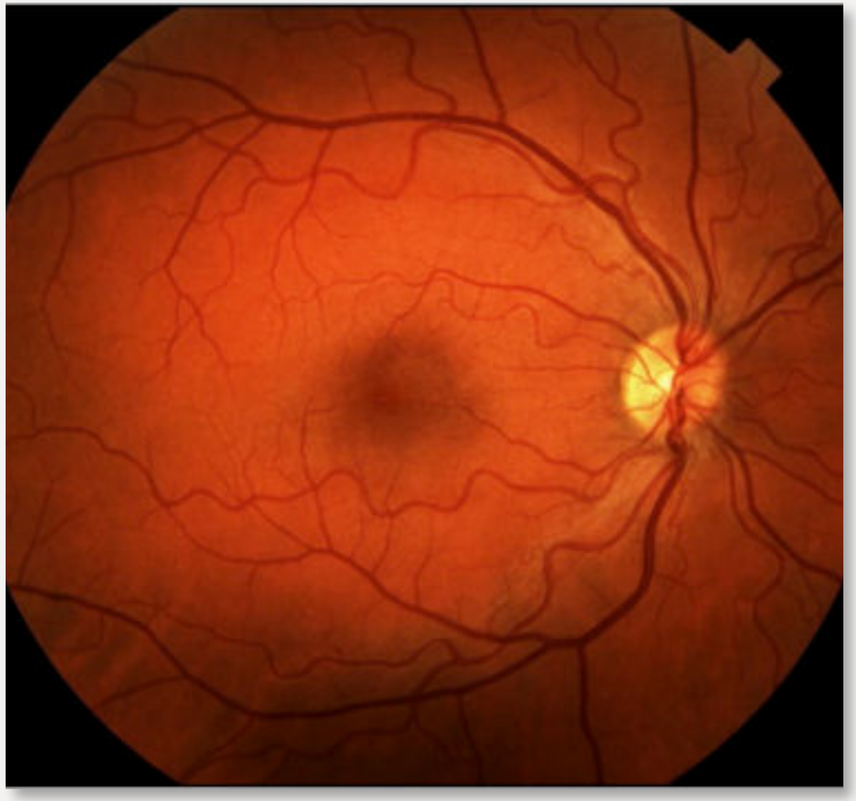
Motivation: Diabetic Retinopathy

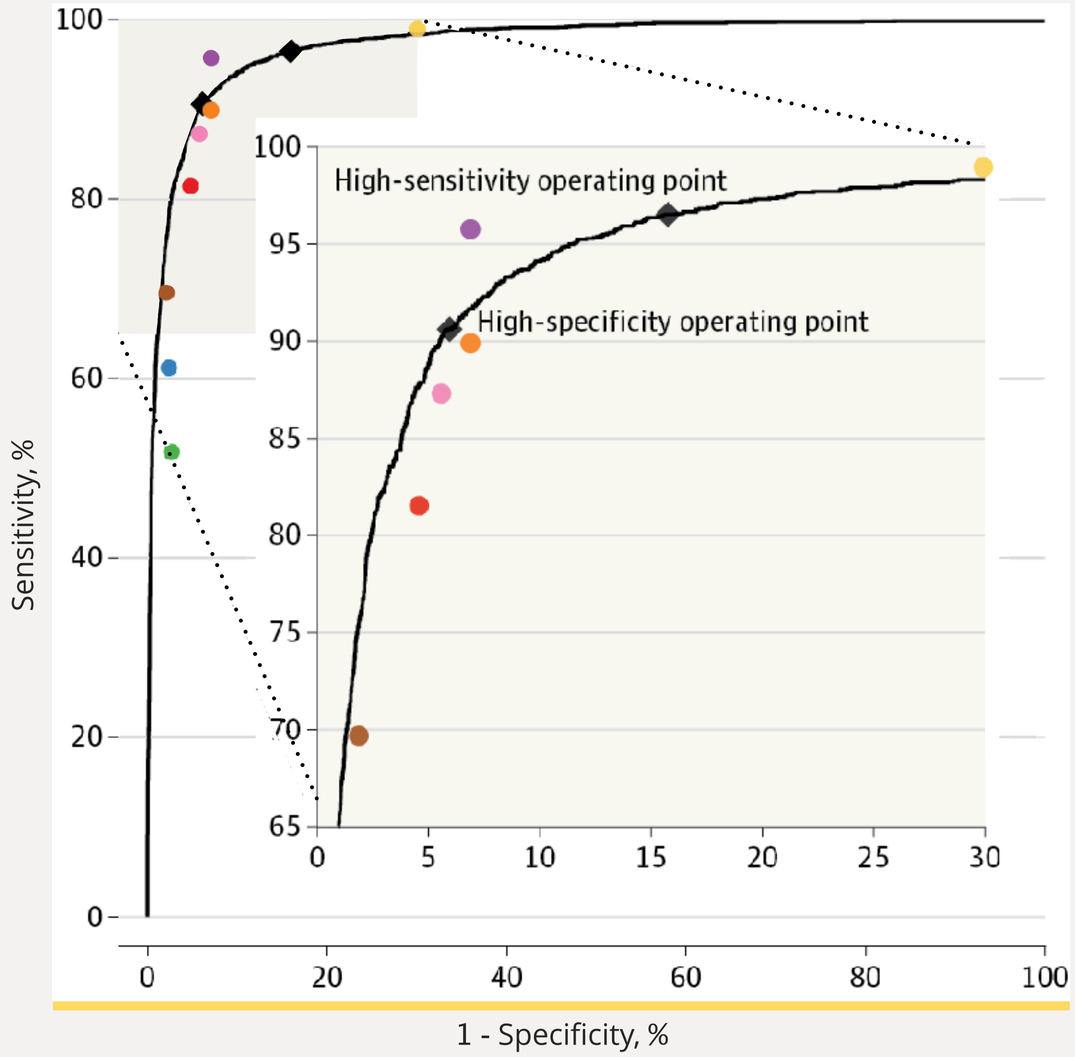
Deep Learning for Image Analysis: Diabetic Retinopathy Classification

healthy retina



unhealthy retina

Deep Learning for Image Analysis: Diabetic Retinopathy Classification

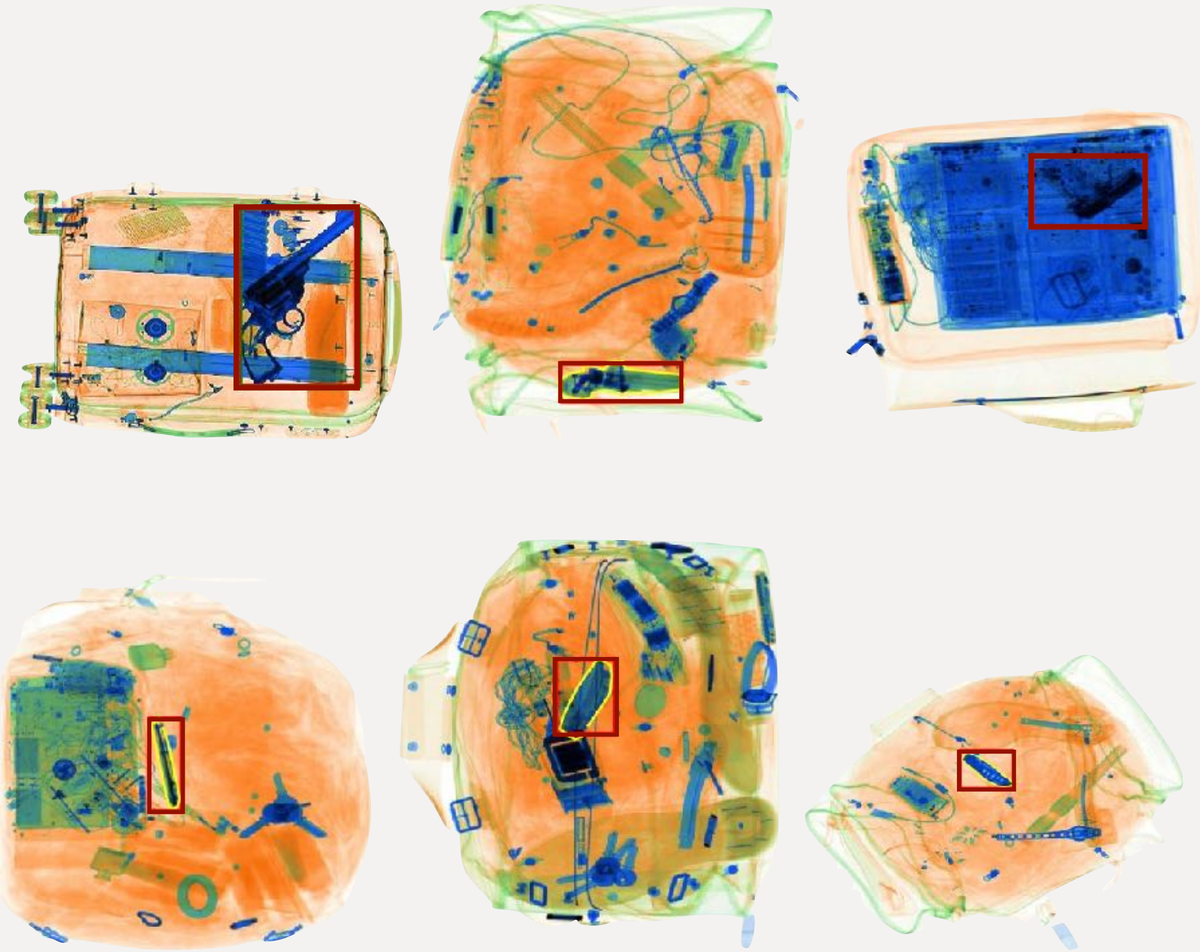


$$\text{sensitivity} = \frac{\text{number of true positives}}{\text{total number of positives in the dataset}}$$

$$\text{specificity} = \frac{\text{number of true negatives}}{\text{total number of negatives in the dataset}}$$

Source: Gulshan et al. *JAMA* (2016)

Deep Learning for Image Analysis: TSA Screening



Source: Liang et al. *SPIE* (2018)

Deep Learning for Image Analysis: Automatic 3D Surface Meshes

Source: DensePose (Facebook)

Credits

Validation Set Performance for Referable Diabetic Retinopathy

Gulshan V, Peng L, Coram M, et al. Development and Validation of a Deep Learning Algorithm for Detection of Diabetic Retinopathy in Retinal Fundus Photographs. *JAMA.* 2016;316(22):2402–2410. doi:10.1001/jama.2016.17216

DensPose: Dense Human Pose Estimation in the Wild

Rıza Alp Güler, Natalia Neverova, Iasonas Kokkinos. DensPose: Dense Human Pose Estimation in the Wild. *arXiv.* 2018. http://densepose.org/