Interpretable Automation of Pulmonary Embolism Diagnosis

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Pulmonary embolisms (PE) affect approximately 300,000 to 600,000 people per year in the United States. Between 10 to 30% of those diagnosed with PE die within a month of its detection. As radiologists find their caseloads and burnout rates increasing, it is essential to develop technological aide for radiologists to diagnose PE. Using artificial intelligence models, convolutional neural networks are used to classify CT scans as either positive or negative for PE presence. By implementing transfer learning with the Inception-v3 network, an 0.915 AUROC is achieved. In addition, saliency mapping is implemented to localize PE presence within the CT scans. Such technologies will be applicable in streamlining the healthcare system.

Awards Won: