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*Few-Shot Detection of COVID-19 Infection from Medical Images*

Since the beginning of 2020, the COVID-19 pandemic has had an enormous impact on global healthcare systems, and there has not been a region or domain that has not felt its impact in one way or another. The gold standard of COVID-19 screening is the reverse transcription-polymerase chain reaction (RT-PCR) test. With RT-PCR being laborious and time-consuming, much work has gone into exploring other possible screening tools to observe abnormalities in medical images using deep neural network architectures. But, such deep neural network-based solutions require a large amount of labelled data for training. In this talk, I'll first briefly introduce the few-shot learning approach in which models are built such that they can adapt to novel tasks based on small numbers of training examples. Next, we will see its application in a real-life example where we used few-shot learning strategies to build a model sensitive to COVID-19 positive cases, using a very limited set of annotated data. The model can generalize from a few examples by employing a unique structure to rank similarities between inputs without necessitating extensive retraining.