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Scala Median Filter Report

For this assignment, I implemented two version of the median filter, which is an algorithm used to reduce the noise of a photograph, via a client server simulation where each server contained a different version of the median filter. The client-server simulation was implemented using Akka Actors where the client and each server was an Actor. The first version of the median filter was implemented sequentially where the median filter algorithm iterated throughout the whole picture once. The second version was implemented in parallel using Scala Futures. In this version, each Future contained a half of a picture which would run the median filter algorithm in parallel to the other half. Upon running the program multiple times with a 300pixels x300pixels picture, it was estimated that the parallel implementation runs on average 0.15 seconds faster than the sequential version. NOTE: the parallel implementation often times does not reduce the photograph’s noise properly as there needs to be a more precise estimate in the algorithm when calculating the starting pixels.