Simulation of light propagation and reconstruction of a medium's density using deep neural networks

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Contents

Motivation

Motivation for the project :

- High demand for **Deep Learning** algorithms, with recent development in hardware and HPC ;
- Re-evaluating how we solve **inverse problems** that often require complex optimization algorithms ;
- Facilitate (early) detection of **cancer** by using AI for medical imaging.

- High demand
- Re-evaluating
- Facilitate (early)

Motivation 2

Motivation for the project :

1. High demand for **Deep Learning** algorithms, with recent development in hardware and HPC ;
2. Re-evaluating how we solve **inverse problems** that often require complex optimization algorithms ;
3. Facilitate (early) detection of **cancer** by using AI for medical imaging.

- test 1
- test 2

Theorem

A is good

$$\begin{aligned} F = \{F_x \in F_c : (|S| > |C|) \\ \cap (\text{minPixels} < |S| < \text{maxPixels}) \\ \cap (|S_{\text{conected}}| > |S| - \epsilon)\} \end{aligned} \tag{1}$$

Thank you for your kind attention ☺!

Questions ?