



STYLE TRANSFER FOR SYNTHETIC MEDICAL IMAGES

Assignment

Researching and summarizing the recent trends in structure-preserving unpaired Style Transfer. Selecting, implementing, and testing the most promising techniques or methods, with a focus on increasing the realism of synthetic medical images. Studying the advantages and limitations of the selected methods/approaches.

Activities

- A preliminary study of state-of-the-art techniques and frameworks for unpaired style transfer.
- Implementation, training and testing of selected models, techniques or approaches.
- Deployment of the above methods and models for enhancement of synthetic data.

Context

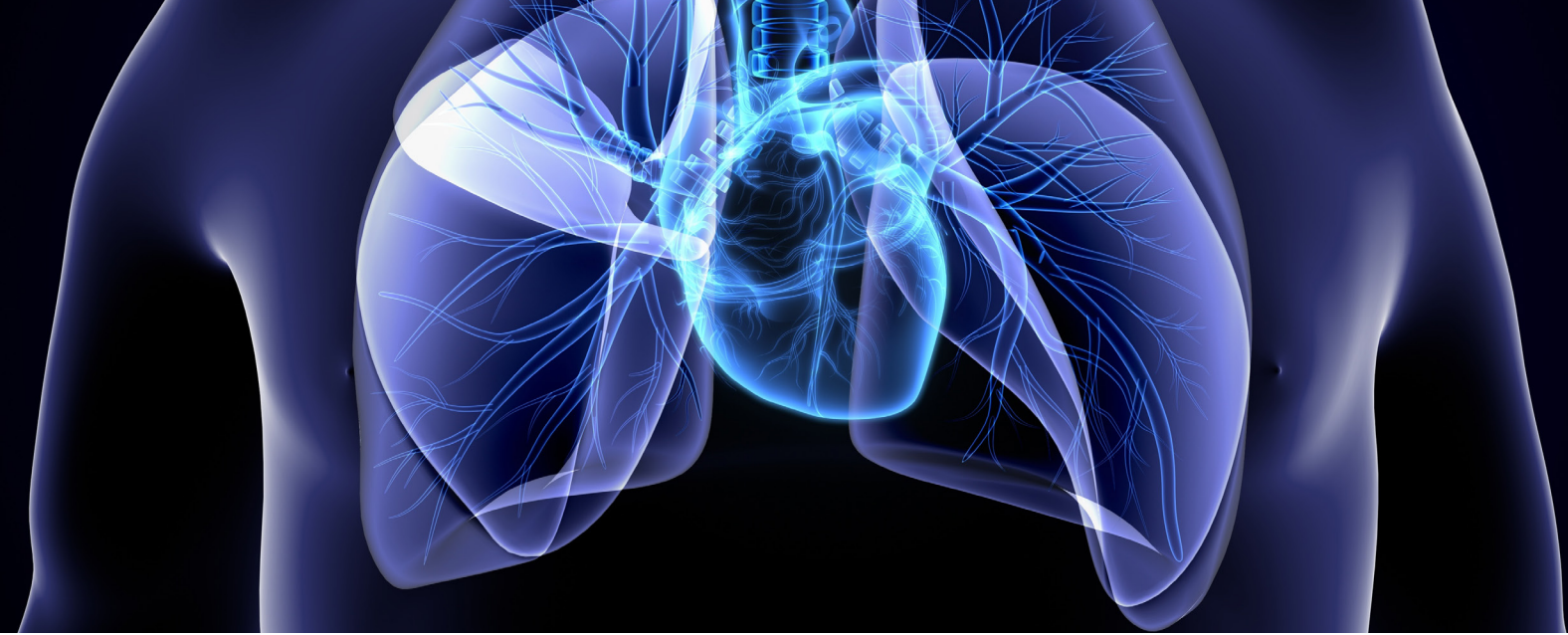
Training physicians in advanced interventions, such as angiography, requires a significant investment in time and resources. Becoming proficient with the devices used in these procedures requires sufficient access to them. However, these machines are expensive and employed for daily patient care, therefore simulators are an invaluable teaching tool. However, simulated images might lack the necessary realism. We propose to leverage recent developments in

Internship overview

- Master Student
- Internship / Graduation
- Mathware
- Location: Eindhoven

Technologies

- Deep Learning.
- Style Transfer.
- Generative AI
- Synthetic Data.



Deep Learning to enhance the realism of synthetic images. We have identified a first enhancement to start with: mapping realistic bone texture onto synthetic images. We are ultimately interested in a generic approach to map various aspects of realism onto synthetic images. Mapping the style of real images into synthetic medical images requires preservation of existing structures, since this might help the physician in their task or might adversely affect the realism of the image. As such, the investigation of structure-aware Style transfer methods is fundamental.



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Would you like to know more about this student assignment?

Contact:

Raffaele Imbriaco

+31 (0)40 - 263 5000

jobs@sioux.eu