

Lung respiratory motion modeling based on 4DCT images

Project Description:

Respiratory motion modeling is becoming increasingly important in various medical imaging applications (e.g., radiotherapy for lung cancer). This project mainly focuses on investigating the lung respiratory motion modeling method based on 4DCT images and improving the model registration accuracy through the corresponding optimized transmission registration method. Our project goal is to propose a lung respiratory modeling method that provides higher accuracy, and ultimately be able to assist lung tumor diagnosis through the respiratory model.

Job Description:

We are seeking a hard-working research assistant with a solid background and interest in optimal transport theory and image registration. The candidate should have a background in applied differential geometry, partial differential equations, or image registration, and be familiar with optimization programming. The hired research assistant will assist the principal in conducting research related to lung respiratory motion modeling and publish relevant academic papers in peer-reviewed journals.

Qualifications:

- Bachelor degree or above in applied mathematics, computer science, information science or other related majors, or with relevant background in image registration, optimal transmission theory, medical imaging, etc.
- Scientific research experience in image processing or applied differential geometry.
- Proficient in Python, MATLAB and other programming languages.