Post-doctoral Fellow - Radiation Oncology, AI & Computer Vision

Location:
Center City, Philadelphia, PA

Job Opening: ID 9311273

Full/Part Time: Full-Time

POST-DOCTORAL POSITION, DEPARTMENT OF RADIATION ONCOLOGY:

Thomas Jefferson University is now accepting applications for a post-doctoral fellow in the Department of Radiation Oncology to perform cutting-edge research in the fields of medical artificial intelligence and computer vision.

This position is based in the **Thomas Lab**, a research group focused on designing and deploying AI-driven tools for radiation therapy applications. The research will emphasize computer vision-based anatomical tracking, treatment verification, and agentic AI for automating and optimizing clinical workflows.

Available projects include: AI-driven automatic tumor contouring for MR-guided radiation therapy (MRgRT). Computer vision applications for patient alignment, position monitoring, collision avoidance, and motion management. Development of agentic AI models for real-time error detection and anomaly handling in radiation therapy workflows.

The fellow will collaborate with faculty and researchers across disciplines, as well as national and international collaborators. Additionally, there will be opportunities to engage in translational research projects aimed at clinical implementation, gaining exposure to radiation therapy systems, treatment planning, and statistical modeling.

Qualifications:
Candidates must have a PhD in Medical Physics, Computer Science, Bioengineering, or a closely related field. The ideal candidate will possess:

- Strong computational skills, with expertise in AI, machine learning, or computer vision.
- A keen interest in medical applications of AI, particularly in radiation therapy.
- A collaborative mindset and the ability to work in a multidisciplinary environment.

Experience in Python programming, deep learning frameworks (e.g., PyTorch, TensorFlow), or AI model deployment is preferred but not mandatory. Candidates with interests in Medical Physics residency will also have opportunities to gain clinical experience. Based on the interest of the post-doctoral fellow; opportunities will be provided to obtain clinical experience, treatment planning experience, as well as mentorship on clinical trial design and statistical modeling methods.

About the Department: The Thomas Jefferson Medical Physics Division consists of 27 physicists, a computational physicist, 7 physics residents, and 5 post-doctoral research fellows. The division spans 6 locations and supports a diverse array of equipment, including Varian and Elekta Linacs, a ViewRay MRI-Linac, and Elekta brachytherapy systems. Treatment planning is performed mainly with Eclipse, and MOSAIQ is used for record and verify.Thomas Jefferson University is an Equal Opportunity Employer. Jefferson values diversity and encourages applications from women, members of minority groups, LGBTQ individuals, disabled individuals, and veterans.

To Apply: Applicants should forward a curriculum vitae and a statement of interest to the physics administrative assistant, Julianne Johnson (Julianne.Johnson@jefferson.edu).