DEPARTMENT OF RADIATION ONCOLOGY

MEDICAL UNIVERSITY OF VIENNA

Vienna Healthcare Group
University Hospital Vienna

2 Ph.D. positions for Autonomous Radiotherapy Planning

🌟 Are you interested in working in the vibrant field of AI in medicine at the Medical University of Vienna? 🔬

We are excited to announce two funded PhD positions for ambitious candidates eager to revolutionize the field of **Radiation Oncology** through advanced **Deep Learning** techniques. 🚀 🚀

🧠 **What's In Store:**

🌍 Cutting-edge research in AI and Radiation Oncology.

🍼 Work on really interesting research topics

👩‍🔬 Mentorship from top-notch experts and access to state-of-the-art facilities.

🤝 A dynamic, supportive research community

🌍 Live in one of the most liveable cities worldwide – Vienna

Modern radiation oncology is poised for a significant breakthrough, focusing on delivering personalized care by adapting treatments in real-time to patients' anatomical changes. While advancements in image-guided systems and delivery techniques have paved the way, the full potential of real-time adaptive strategies remains untapped due to limitations in automation and speed within current Treatment Planning Systems (TPS).

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Our groundbreaking project aims to overcome these challenges by integrating cutting-edge Deep Learning (DL) and Reinforcement Learning (RL) technologies into the treatment planning process. We have three core objectives:

🔬 **Pioneer a Fully Autonomous Treatment Planning Pipeline**: Develop the world's first radiation therapy planning system that operates independently of conventional TPS, leveraging advanced DL architectures.

🔬 **Explore Reinforcement Learning in Treatment Planning**: Investigate how RL can enhance the planning process by directly optimizing machine parameters in Volumetric Modulated Arc Therapy (VMAT) plans in radiotherapy.

🔬 **Establish a Next-Generation Workflow**: Create a real-time adaptive treatment workflow that significantly improves the effectiveness and safety of radiation therapy.

🎯 **Ready to Apply? Here's How:**

1. Visit our online application portal
2. Submit your application **by 15.11.2024**, 23:55CET
3. Specify your interest in our lab and your research aspirations.

🌐 **Learn More:**

🔗 Visit our lab

🔗 Application portal