

April 30, 2021

DEVELOPER (MSc or POSTDOC) in (medical) image processing/artificial intelligence to develop auto-contouring solutions in preclinical precision radiation research.

We are looking for someone with a strong interest in artificial intelligence and software development. We are looking for a dynamic co-worker, preferably a recent graduate with a MSc degree in (bio)physics, or in medical imaging. Candidates with a relevant PhD will also be considered. Candidates with advanced computer programming skills and interests or with previous experience in artificial intelligence or Deep Learning will be favored. Candidates should have an excellent study record and be willing to work in a small highly motivated team. Applicants should be excited about working in a young R&D company, in close collaboration with the academic world. Applicants should be willing to relocate to the region around Maastricht (which is in a beautiful part of the Netherlands, and also close to Germany and Belgium). Knowledge of the Dutch language is not a requirement. You should be fluent in English (written and spoken). EU applicants must be given priority.

Which project do we offer:

We are a small Dutch company, existing for 6 years, and we're one of the leaders in developing software solutions for preclinical treatment planning and radiation dose calculation. We work in the novel field of precision radiation studies for preclinical oncology research (with rodents). The final aim of this field is clinical translation to human radiotherapy for cancer treatment, which is why we work in close collaboration with the academic world (University of Maastricht) and a radiotherapy clinic (MAASTRO), both also in Maastricht on the same Brightlands campus as our company. **This project focuses on developing software solutions for auto-contouring normal organs and tumors**, for subsequent irradiation. Auto-contouring is the process whereby fully automatically organs boundaries are recognized in 3D CT images. The project builds on preliminary work done during a 1-year proof of concept project. We use mostly Deep Learning modelling, so knowledge about this is a big advantage. You would have to use tools such as code development in TensorFlow, Keras, Matlab, C++ and Java. Your work will result in research tools which will then be commercialized for researchers worldwide by our company. Visit us on www.smartscientificsolutions.com

What do we offer:

To start, we offer a 12 month contract in this exciting project, with a potential extension or permanent position afterwards. Salary is between 2750€ and 3500€ gross per month, depending on experience. The package includes an 8% vacation pay, 4 weeks vacation. If you are a foreigner, you may qualify for the 30% tax ruling if you currently live 150km away from the Dutch border. Relocation expenses will be reimbursed up to a maximum of 3000€. We stimulate research activities and attendance of conferences. The possibility exists to obtain a PhD out of the work, due to the strong link with the University of Maastricht on the same campus. Part of the work can be done remotely. The experience you gain is also highly relevant in radiotherapy clinics.

Further information and applying for this position:

Please contact prof Dr Frank Verhaegen by e-mail: frank.verhaegen@smartscientific.nl or by calling +32-474-720570, preferably before May 31.

The figure shows a snapshot of our preliminary software method, OMEGA, a preclinical auto-contouring system for rodents. These contours are used for multiple purposes in preclinical research and it is essential they can be rapidly calculated (few seconds) in a fully automatic fashion. The system needs some further development, testing and implementation into our existing treatment planning software, SmART-ATP.

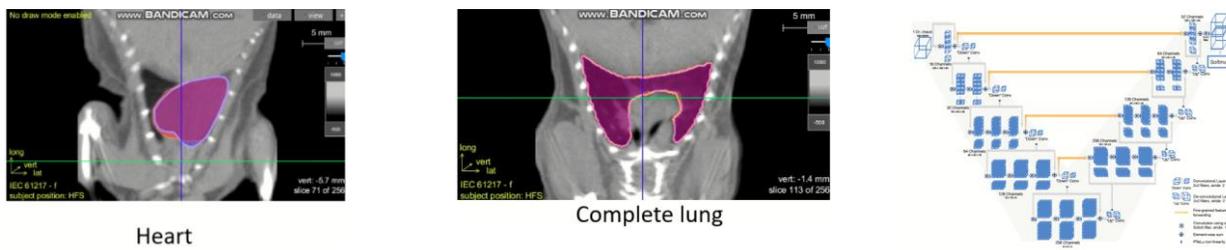


Figure: Examples of our Deep Learning U-Net models to fully automatically segment normal organs in CT images of rodents for preclinical precision irradiation research in oncology and other fields. Left and middle: CT images with autocontoured organs (lung and heart). Right: typical U-Net model developed and optimized for the OMEGA project.