Postdoctoral Fellowship in Deep Learning Applied to Magnetic Resonance Imaging/Physics

Department of Radiology and Nuclear Medicine, St. Olav’s University Hospital, Trondheim, Norway

About the position

One postdoctoral fellowship is available at the Department of Radiology and Nuclear Medicine at St. Olav’s University Hospital in Trondheim, Norway, to start in early-mid 2022. The position is full time (100%), and provisionally has a fixed term of two years (there is the possibility of extending this term by up to one year in conjunction with a research stay abroad). The postdoc will join the project “Deep learning cancer diagnostics from diffusion-weighted magnetic resonance imaging”, funded by the Research Council of Norway.

This project will open up new, non-invasive means for assessing cancer. The approaches developed will combine highly efficient, novel imaging strategies with artificial intelligence, to permit fast, contrast-free and robust cancer diagnostics.

We seek a highly motivated researcher with a background in MRI physics, image processing and/or deep learning. The postdoc will have the opportunity to work on diverse topics according to their experience and interests. For example, they may contribute to work exploring the use of novel acquisition strategies for diffusion-weighted imaging, image reconstruction involving deep learning, pulse sequence development, advanced diffusion modelling and parameter estimation, and novel image processing techniques.

The project is led by Dr. Peter T. While, physicist and researcher at the Department of Radiology and Nuclear Medicine at St. Olav’s University Hospital, and adjunct associate professor at the Department of Circulation and Medical Imaging at the Norwegian University of Science and Technology (NTNU). The postdoc would also join one other postdoc and one PhD student working on this project.

Main duties and responsibilities

- Perform research towards the fulfilment of the project objectives
- Disseminate results through the publication of scientific papers and the delivery of seminars and conference presentations
- Keep up to date with current developments in the research field through regular literature surveys
- Initiate and/or participate in new research projects in collaboration with the research group
- Assist with the supervision of research fellows and/or students
Selection criteria

Eligibility requires the completion of a doctoral degree in physics, applied mathematics, computer science or a similar discipline, which is recognized as equivalent to a Norwegian doctoral degree. Applicants who expect to have submitted their PhD thesis by the application deadline may also apply.

Desired criteria:

- Background in MRI physics and image processing
- Background in deep/machine learning
- Good computer programming skills in Matlab, Python or similar
- Excellent written and oral English language skills
- Good publication record relative to career stage

Of particular interest, but not required:

- Experience in MRI image acquisition and reconstruction
- Experience in pulse sequence programming, especially within IDEA (Siemens)
- Experience in diffusion modelling and parameter estimation

Personal characteristics

- Strong motivation for the position
- Takes initiative and excels in problem solving
- Professional independence
- Actively participates in teams
- Good communication skills
- Contributes to a supportive and friendly working environment

We offer

- Stimulating tasks of international relevance in a strong academic environment
- An open and inclusive work environment based on mutual respect and goodwill
- Favourable salary and pension scheme by international standards

Salary and conditions

Postdoctoral fellows are placed in code 1352, and are normally remunerated at gross from NOK 553 500 per annum before tax, however this may be higher depending on qualifications and seniority. From the salary, 2% is deducted as a contribution to the Norwegian Public Service Pension Fund.

About the application

The application must contain:
• The applicant’s CV, including contact information for at least 2 references
• A complete list of publications and other scientific work; in cases where the applicant is not the primary author, a short summary outlining the applicant’s contribution is requested
• Copies of academic diplomas and transcripts; applicants from universities outside Norway are requested to send a diploma supplement (or a similar document) which describes in detail the study and grading system

Applicants may optionally provide a brief research statement outlining a possible additional project that could be undertaken in collaboration with the research group during the employment period.

TO APPLY: For further information, or to apply for the position, please contact Dr. Peter T. While, email: Peter.Thomas.While@stolav.no, phone: +47 728 36627

Application deadline: 20th March 2022

*Note that applications will be reviewed on receipt, and the position could be filled ahead of the deadline in the case of an exceptionally well-qualified applicant.

General information

Norway provides all residents universal healthcare, free schooling, subsidized child-care and overall equality. Trondheim is the innovation capital of Norway, with a population of 200,000. It offers great opportunities for education (including international schools) and possibilities to enjoy nature, culture and family life, and has low crime rates and clean air quality. St. Olav's University Hospital in Trondheim is one of Europe's most modern hospital facilities. It is closely integrated with the Faculty of Medicine and Health Sciences at NTNU, where clinicians, researchers and students work side by side. The hospital has approximately 10,500 employees and a gross budget of NOK 10 billion. The Department of Radiology and Nuclear Medicine currently operates nine MRI scanners, including a hybrid PET-MRI (3T) scanner and PET cyclotron, and an ultra-high field 7T scanner.