

BRACCO FELLOWSHIPS EDUCATION IN RESEARCH ENROLMENT FORM

Name of Institution: Department of Biomedical Imaging and Image-guided Therapy,

Medical University of Vienna, Vienna General Hospital

City and Country of Institution Austria

RESEARCH GROUP

Brief description of the research group and of its mission:

The research group is a multidisciplinary team of specialists, namely radiologists mathematicians, IT-specialists, oncologists etc., organized by the Department of Biomedical Imaging and Image-guided Therapy in collaboration with in the newly established Christian Doppler Institute. This institute is co-funded by the Christian Doppler Society, guaranteeing a seven-year continuous funding for achieving sustainable research results. It aims at using radiomics data from photon counting CT to establish improved diagnosis of lung nodules and to gather prognostic information in lung cancer via machine learning algorithms.

TITLE OF PROPOSED RESEARCH PROJECT

Machine learning in lung cancer

OBJECTIVES

- To assist the development machine learning algorithms for the investigation of focal lung lesions
- To learn how to use imaging and raw data from (photon-counting) CT in the diagnosis of lung cancer
- To understand how to establish prognosis based on radiomics information in lung cancer patients

APPLICANT'S DUTIES

- To learn how to set up the research project and submit to the ethic review board
- To curate imaging data to be used for the training of machine learning algorithms
- To work with mathematicians and IT specialists in designing algorithms
- To analyse imaging data with use of designed algorithms

APPLICANT'S BENEFITS

- Participation in scientific outcomes of the project, i.e., presentations at congresses or publications of papers
- Understanding the use and benefit of machine learning algorithms
- Comprehending the benefit of working in multidisciplinary groups

- Project Leader: Georg Langs, Helmut Prosch
- Members: Benedikt Heidinger, Daria Kifjak, Iulia Milos, Svitlana Pochepnia, Florian Prayer, Sebastian Röhrich, Christian Wassipaul, Martin Watzenböck