

Sofie Lövdal

Short Biography:

Sofie is a PhD candidate at the nuclear medicine department of the UMCG and intelligent systems group of the Bernoulli Institute for Mathematics, Computer Science and Artificial Intelligence. She graduated in 2021 with a MSc in Computing Science from the University of Groningen, and worked on extending at the Kapteyn Astronomical Institute before starting her PhD trajectory. Working together with a research group studying neurodegenerative diseases, some of her research interests are early prediction of diagnosis, subtyping of Parkinson's disease, harmonization of multi-center data and modeling of disease progression.

Abstract:

Center specific effects in PET scans arise due to a multitude of reasons, such as differences in clinical protocol, scanner resolution, reconstruction settings and software. This frequently restricts the merging of data sets between centers and introduces source specific bias. Iterative subspace correction is a recently proposed method which exploits the properties of Generalized Matrix Learning Vector Quantization to classify the center origin of healthy controls, and subsequently constructs a subspace where the identified center differences are removed. We apply the method on FDG-PET scans from three centers, including four disease classes. We demonstrate that center specific effects can be removed and quantified, while retaining disease specific information, where both the correction and classification result can be visualized on a voxel level.