Image Analysis Seminar

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Detection of Motor Decline in Early Parkinson’s Disease by Interaction with Digital Devices and Brain Imaging

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2:30PM–3:30PM
Room 646 PGH

Abstract: Parkinson’s disease (PD) is the second most prevalent neurodegenerative disorder in the western world. It is estimated that PD neuronal loss precedes the clinical diagnosis for more than 10 years which leads to a subtle motor decline that cannot be detected with clinical measurements in the current standard of care. This is an urgent unmet medical need. In fact, multiple research groups have independently argued that experimental neuroprotective drugs could significantly slow down or stop the disease progression if administered at the early stages of neuronal damage.

Clinical tools able to measure ecologically valid motor phenotypes to detect and stage motor decline are still elusive. It is known that tests run in the clinic are somehow artificial and cannot capture the whole complexity and variation of PD and other neurodegenerative diseases. In recent studies, my group has shown the feasibility of passive monitoring of the daily interaction with digital devices to measure motor signs in the early stages of PD. In this talk, I will present an overview of these approaches as well as the future steps to enhance them by integrating functional and structural Magnetic Resonance Imaging (MRI) connectomes.