

STUDY MOTIVATION

Movement Disorder Society - Unified Parkinson's Disease Rating Scale (MDS-UPDRS) is the most widely used clinical scale for assessing Parkinson's disease (PD) symptoms

LIMITATIONS: Subjectivity, dependence on experienced assessors, and on patient cooperation

SOLUTION: Assess PD symptoms by using inertial sensors integrated with a serious game

Serious game for rehabilitation and monitoring of individuals with Parkinson's disease

Bee-themed game so-called *RehaBEElitation*

Four phases, each one representing a bee's task in the real world

Human machine interface device: glove with inertial and tactile sensors

Movements incorporated into the game: *hand opening-closing, wrist extension-flexion, wrist adduction-abduction, finger tapping and forearm supination-pronation*

Objective assessment of bradykinesia

Voluntary movement detection: Singular Spectrum Analysis (SSA)

Bradykinesia assessment: MDS-UPDRS and by estimating players' response time (RT) and angular velocity (AV)

CG participants obtained the best results for RT and AV, followed by EG in the ON state and EG in the OFF state

DATA COLLECTION

Experimental Group (EG):
15 individuals with PD
ON and OFF medication states

Control Group (CG):
15 healthy individuals

