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Automated symptom evaluation using sensor data from wearables in patients with Parkinson's disease utilizing explainable AI

Parkinson's disease is a neurodegenerative disorder that affects primarily dopaminergic neurons often showing a characteristic tremor or akinesia. While the severity estimation remains a stationary UPDRS scoring, we aim for an additional sensor-driven approach to develop an automated symptom evaluation for a second opinion. Our team collected over 200 million samples of accelerometer data and over 5000 corresponding UPDRS labels at the neurology department of the University Hospital Hamburg-Eppendorf. We implemented an explainable AI algorithm as well as a high-performance baseline model. First results show a high accuracy even for explainable classifiers. Consequently, we determined that a simple algorithm might be superior to a complex model in clinical routine to support clinicians' decision process.

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Keywords

Parkinson
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TentID

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