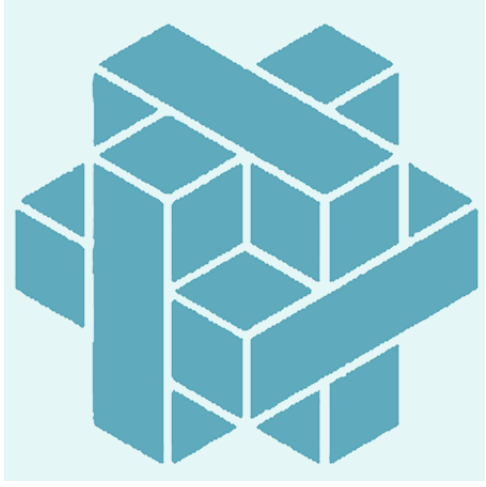
Project PD-LEARN

Data Science and Machine Learning in a Medical-Epidemiological Context

Christian Bracher



Background: Parkinson's Disease

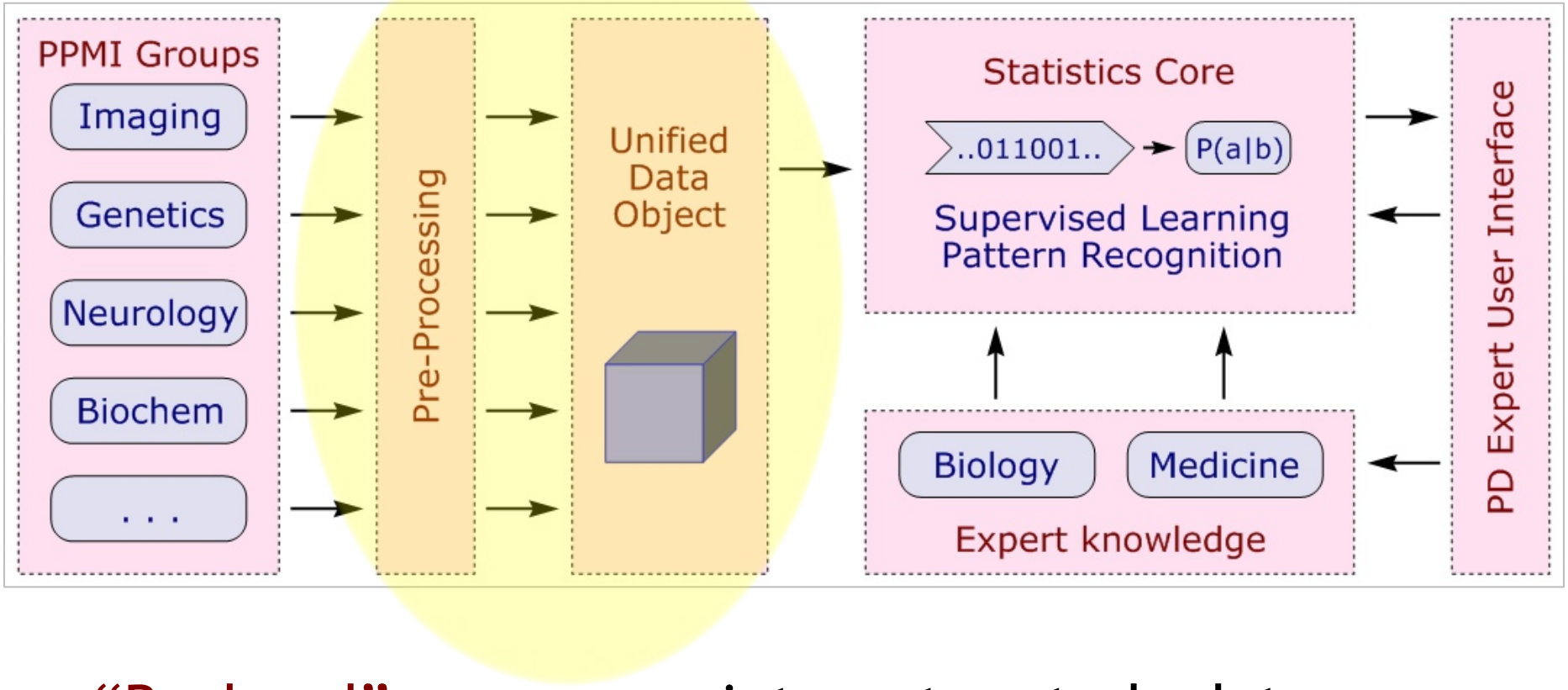
- Common, chronic, incurable disease
- Causes not well understood

Parkinson Progression Marker Initiative

- Multimodal clinical study
- ~1,000 subjects, ~200 assessments per subject

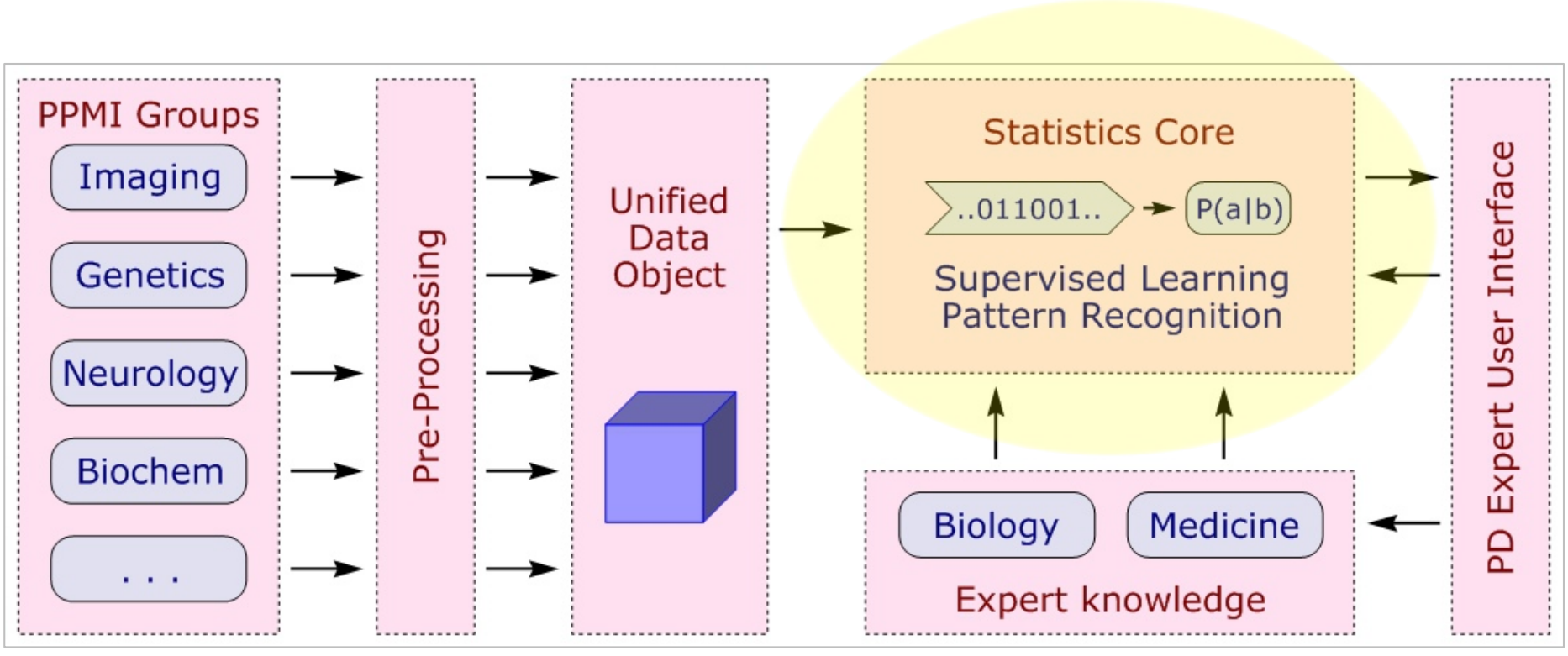
Data science & machine learning approach!

Machine Learning Support for PPMI



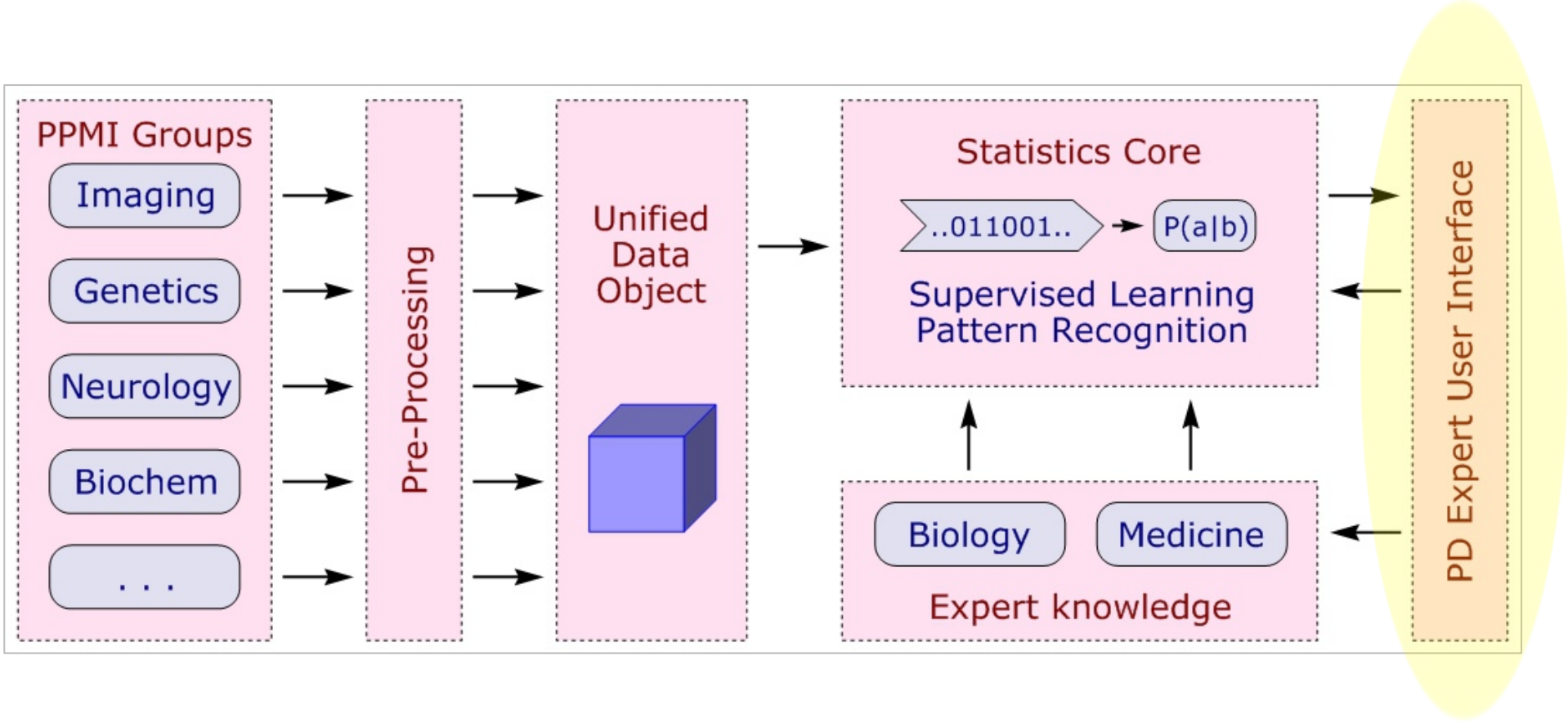
- "Backend" processes, integrates study data

Machine Learning Support for PPMI



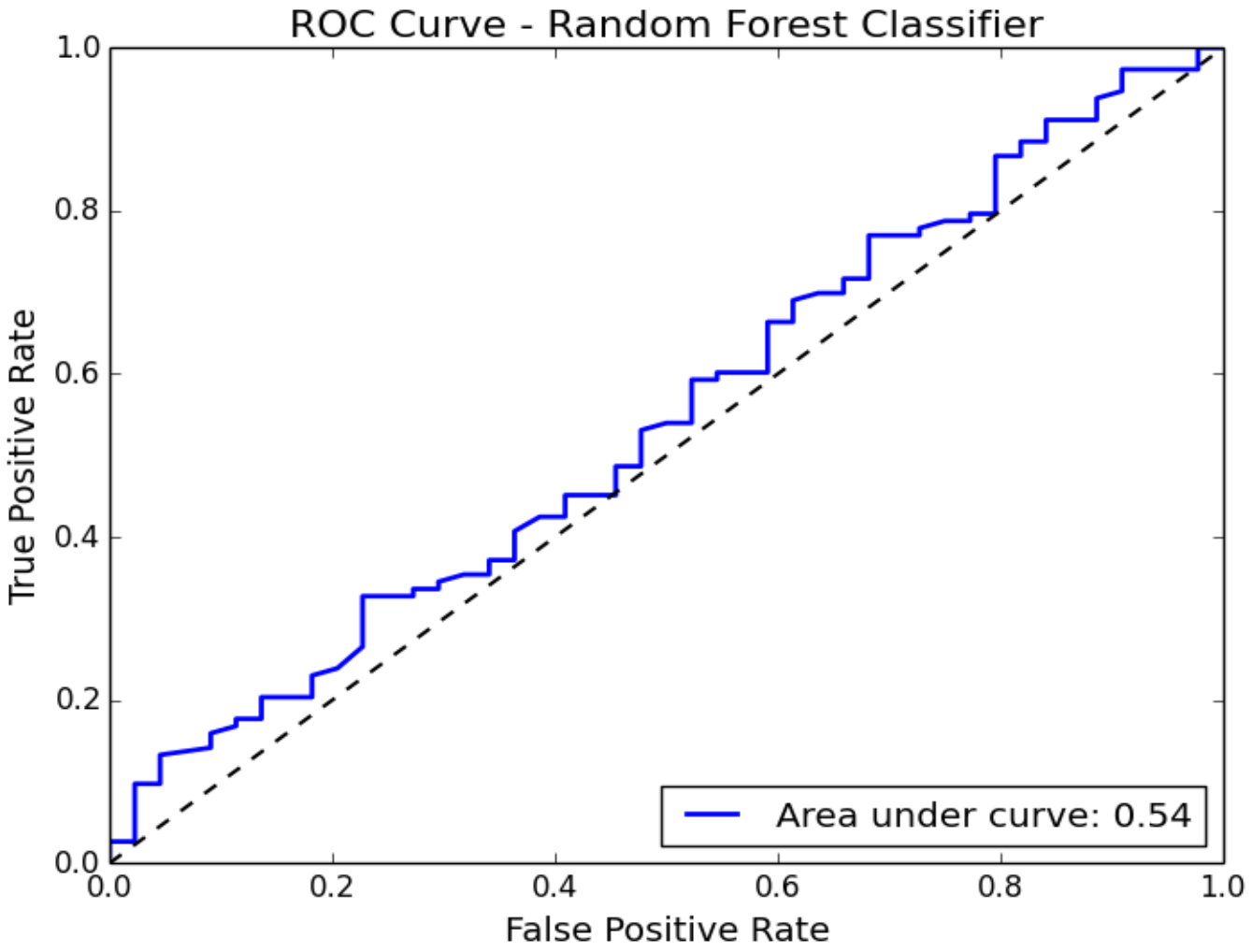
- "Core" hosts statistics & ML capabilities

Machine Learning Support for PPMI

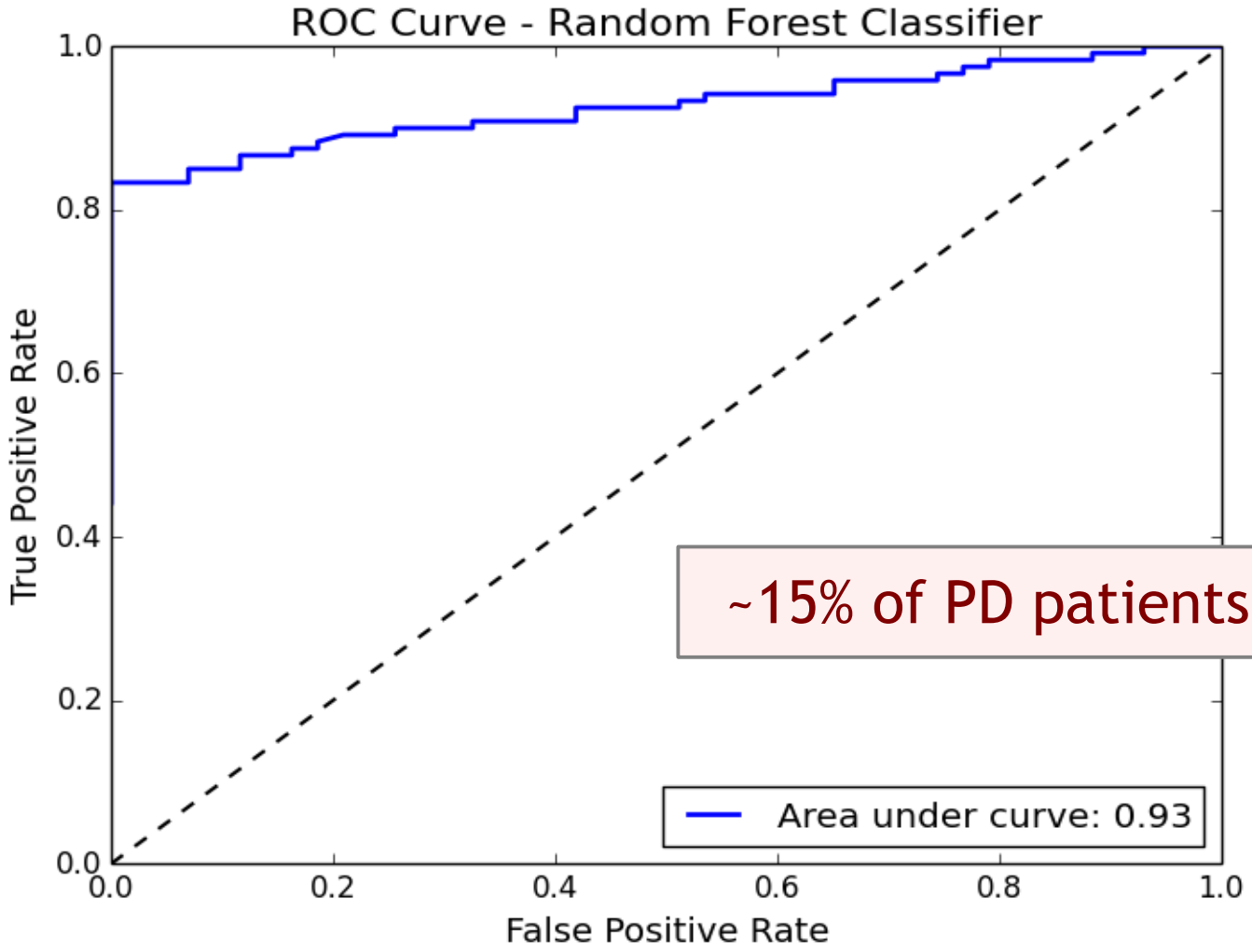


- User-friendly "frontend" for PD experts

Insight: CSF Proteins Do Not Predict PD



Insight: Sensitivity of SPECT Imaging



~15% of PD patients “fail” test!

Summary & Outlook

- **Machine learning framework** for PPMI study data
- Gathering first insights on Parkinson's Disease

- **Coding challenges:** Add features, build interface
- **Research:** Identify clusters, progression markers
- **'Best practices'** for PD diagnosis

THANK YOU!

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