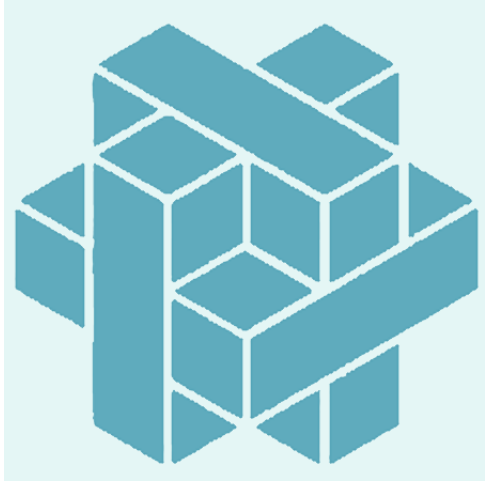
Project PD–LEARN

Data Science and Machine Learning in a Medical-Epidemiological Context

Christian Bracher



Background: Parkinson's Disease

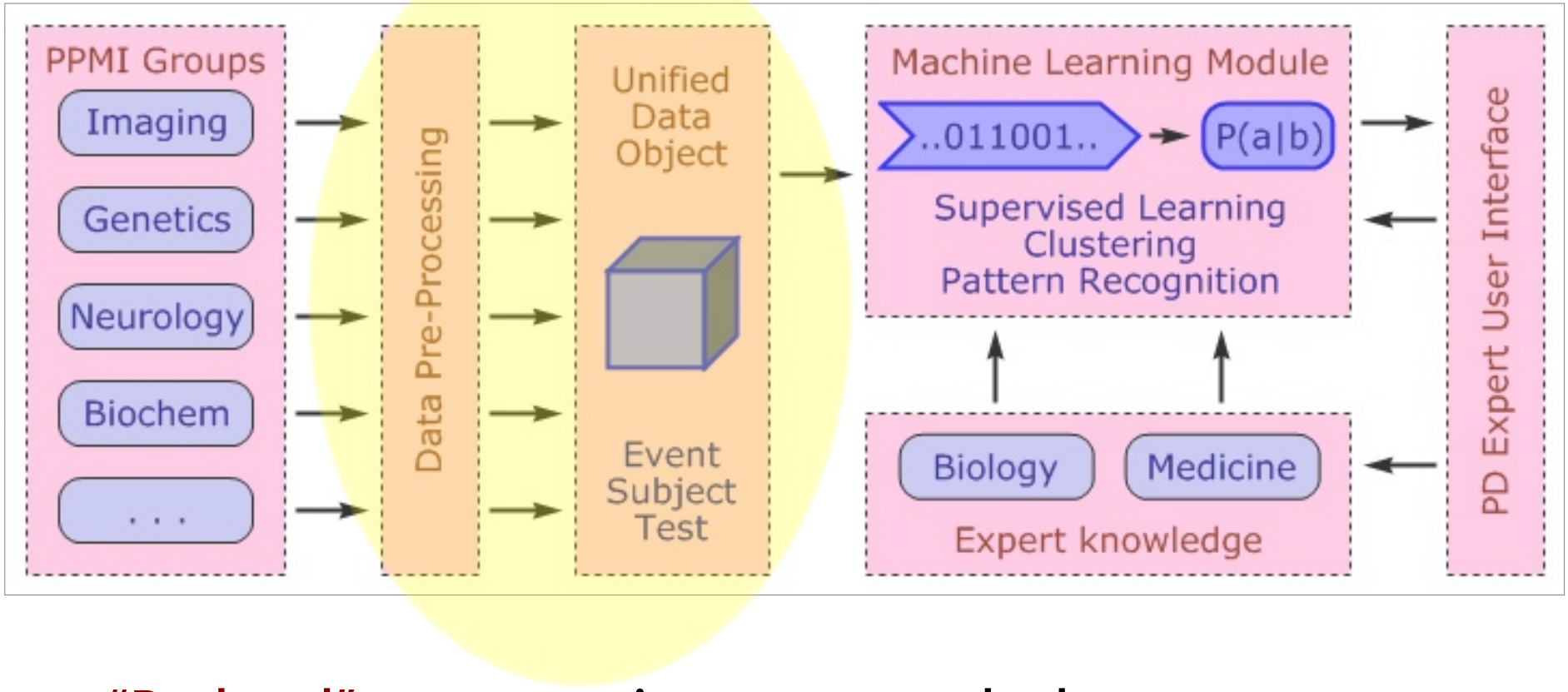
- Debilitating, incurable chronic disease; common
- Causes and mechanism of PD not well understood

Parkinson Progression Marker Initiative

- $60M world-wide, multimodal clinical study
- ~1,000 subjects, with ~200 assessments per subject

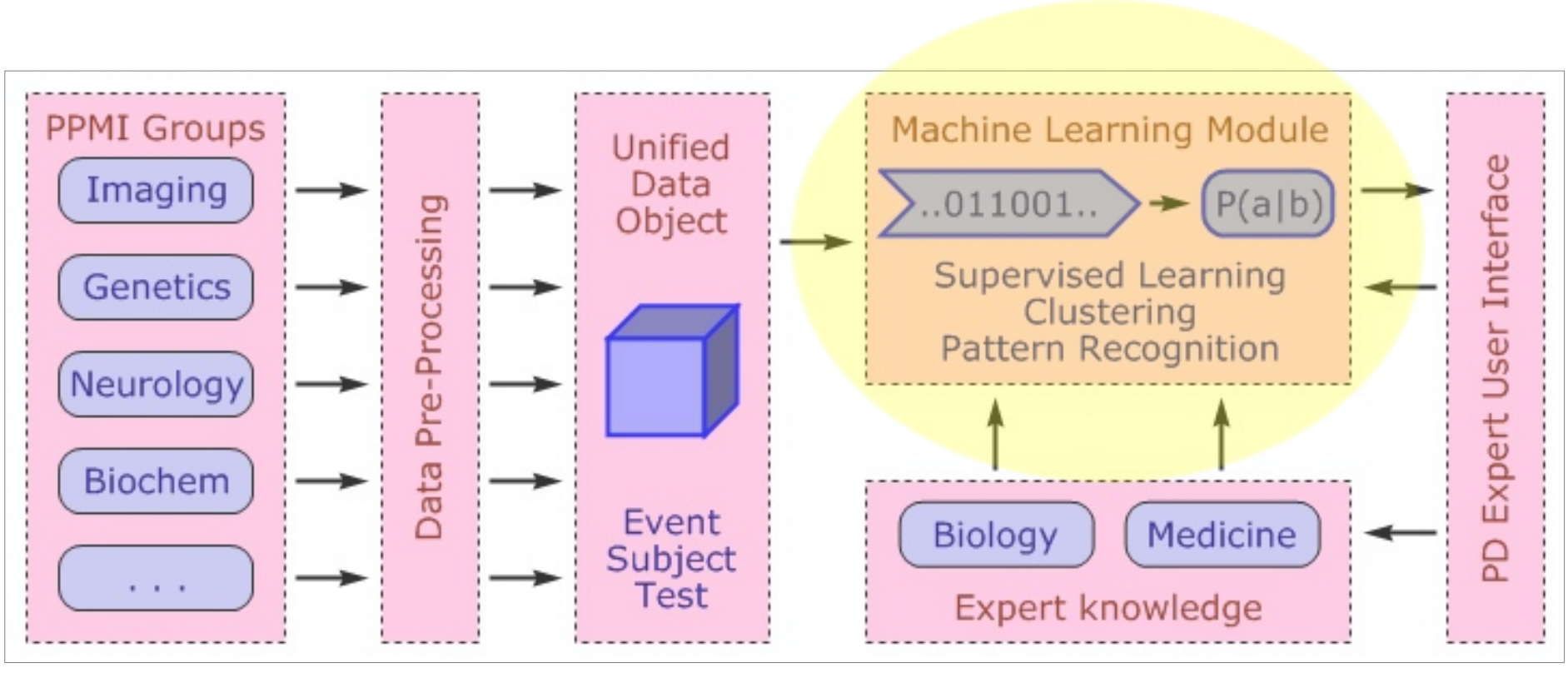
Data science & machine learning approach!

Machine Learning Support for PPMI



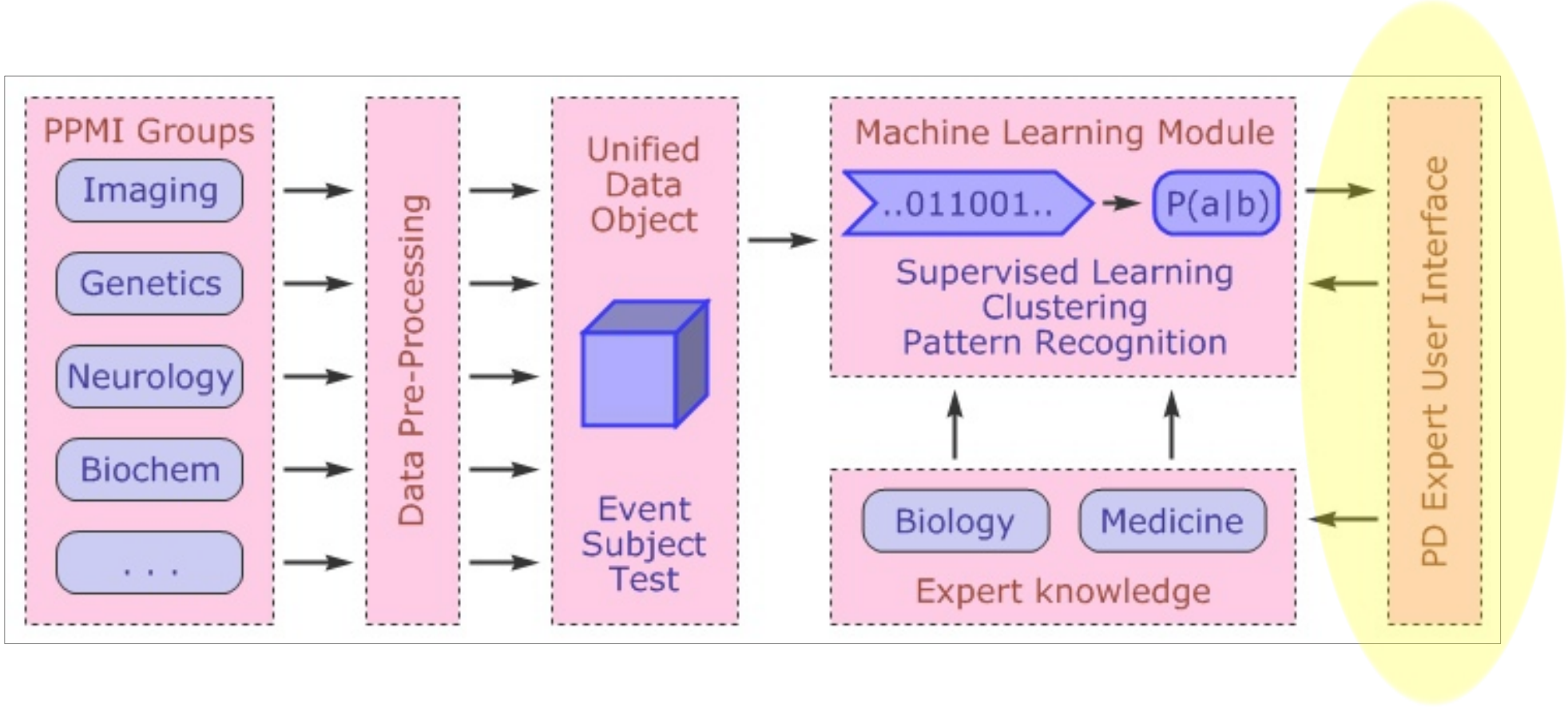
- "Backend" processes, integrates study data

Machine Learning Support for PPMI



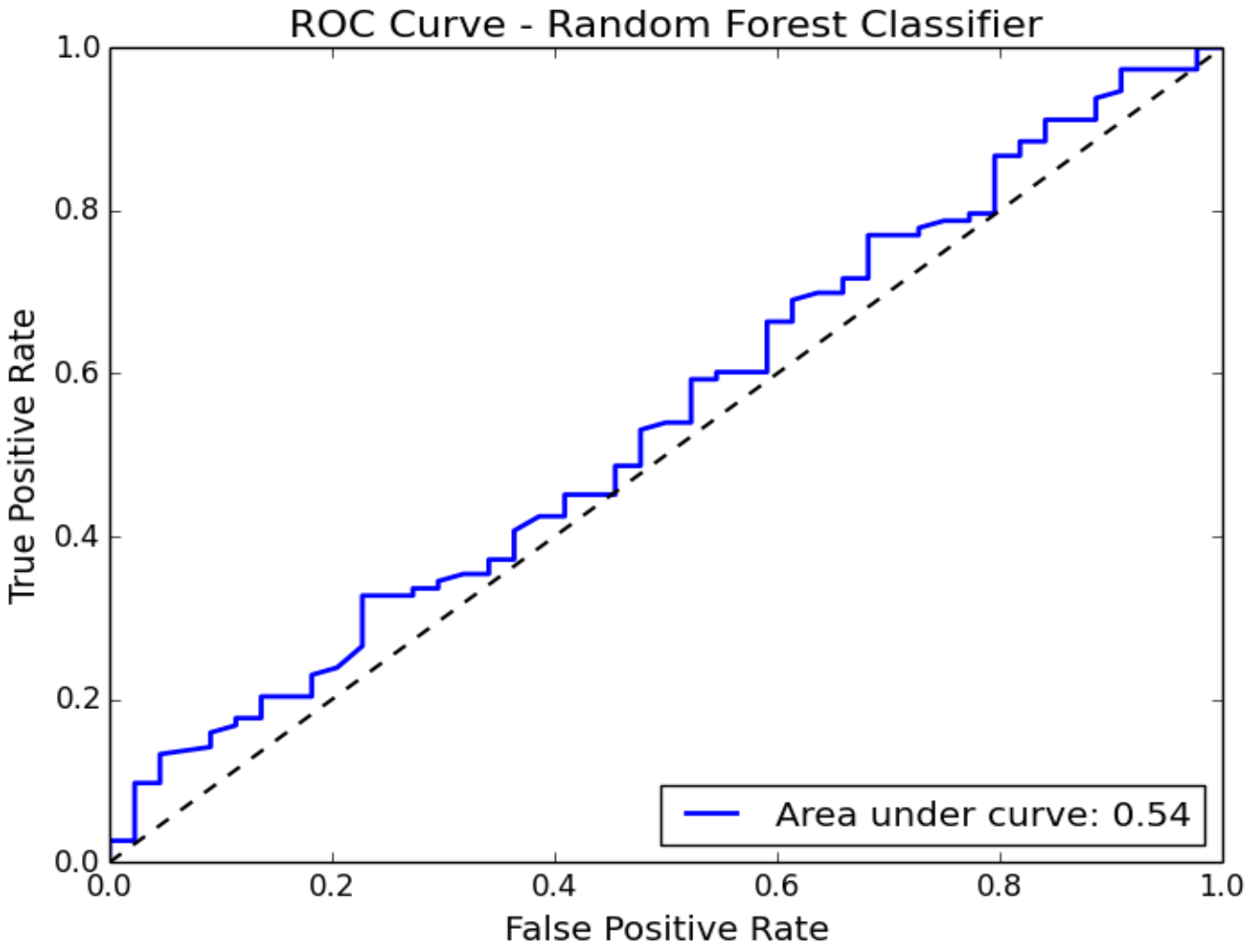
- "Core" hosts statistics & ML capabilities

Machine Learning Support for PPMI

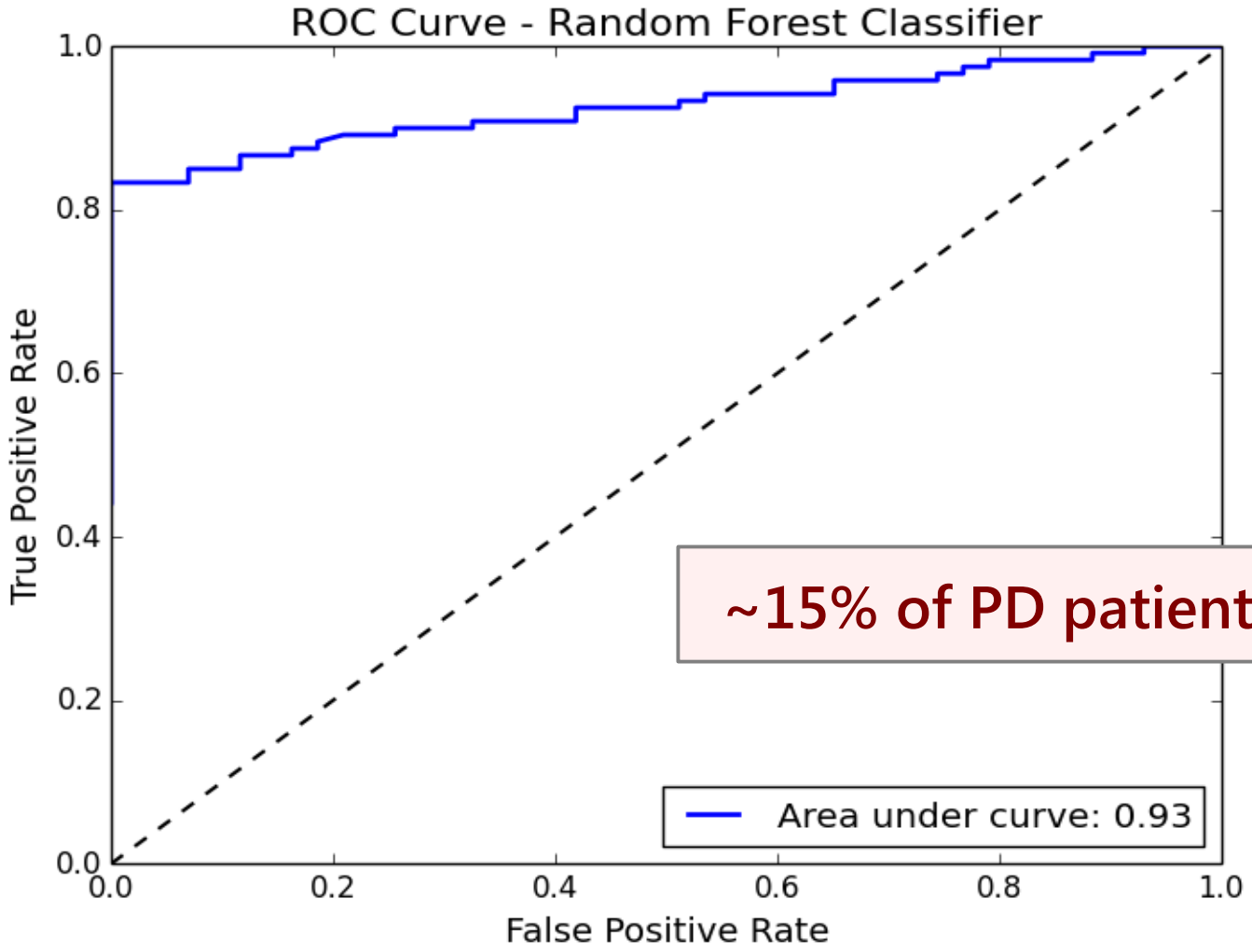


- "Frontend": User-friendly interface for PD experts

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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