Appendix

1 Overview of All Components

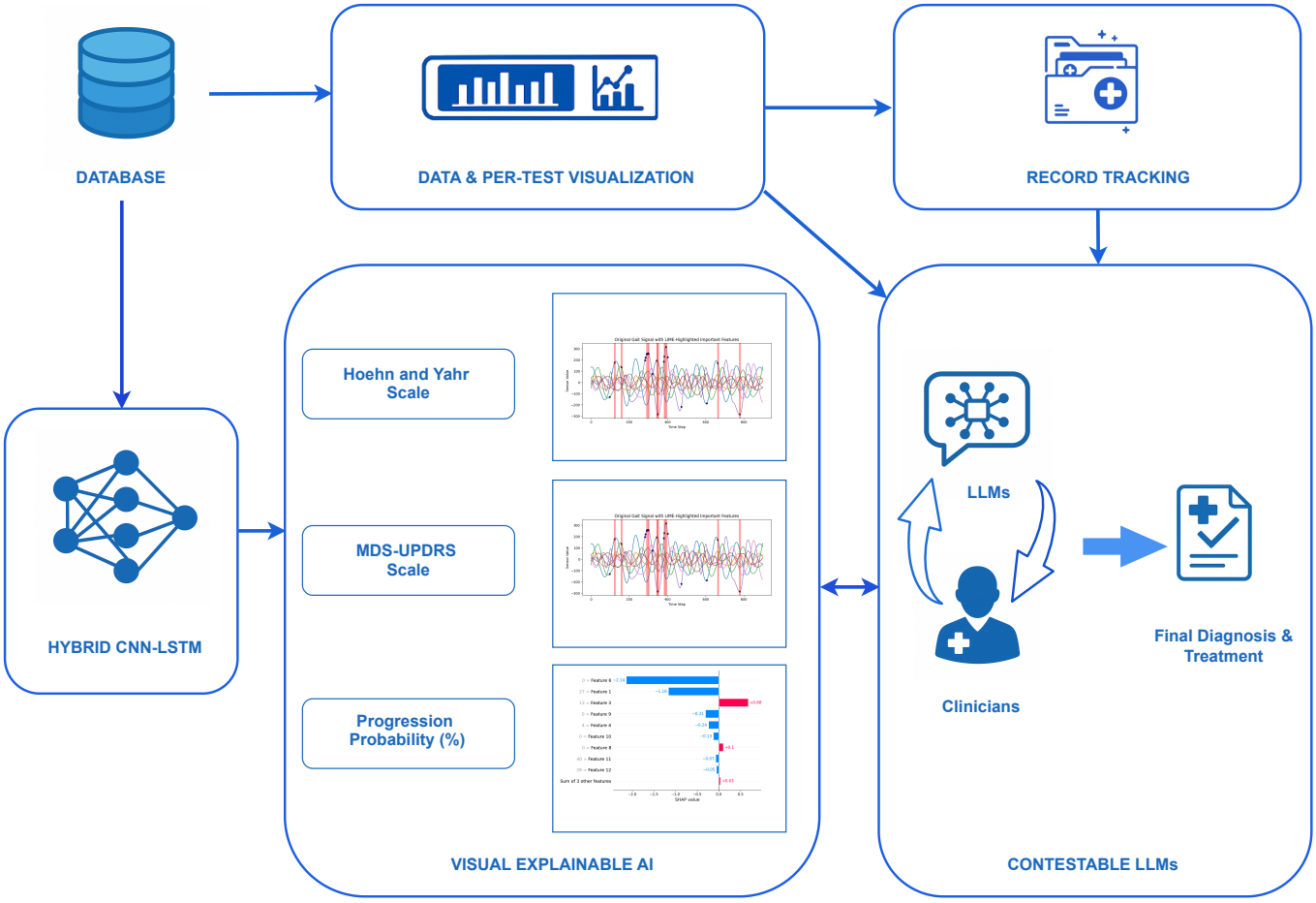

Figure 1: System architecture of the clinician-centered dashboard for Parkinson's Disease care. Raw sensor data is stored in a centralized database and processed through a hybrid CNN-LSTM model to generate predictions for Hoehn and Yahr stage, MDS-UPDRS score, and progression probability. These outputs are visualized using interpretable plots (using SHAP) in the Visual Explainable AI module, allowing clinicians to trace feature contributions. In parallel, the system provides per-test data visualization and longitudinal record tracking. A locally hosted LLM generates natural-language summaries of AI insights, which clinicians can review, interpret, and refine. This interaction forms the core of the contestable AI design, ensuring that all AI outputs remain transparent, traceable, and subject to human oversight in the final diagnosis and treatment process.

2 Dashboard Main Tabs

2.1 Tab 1: Data overview

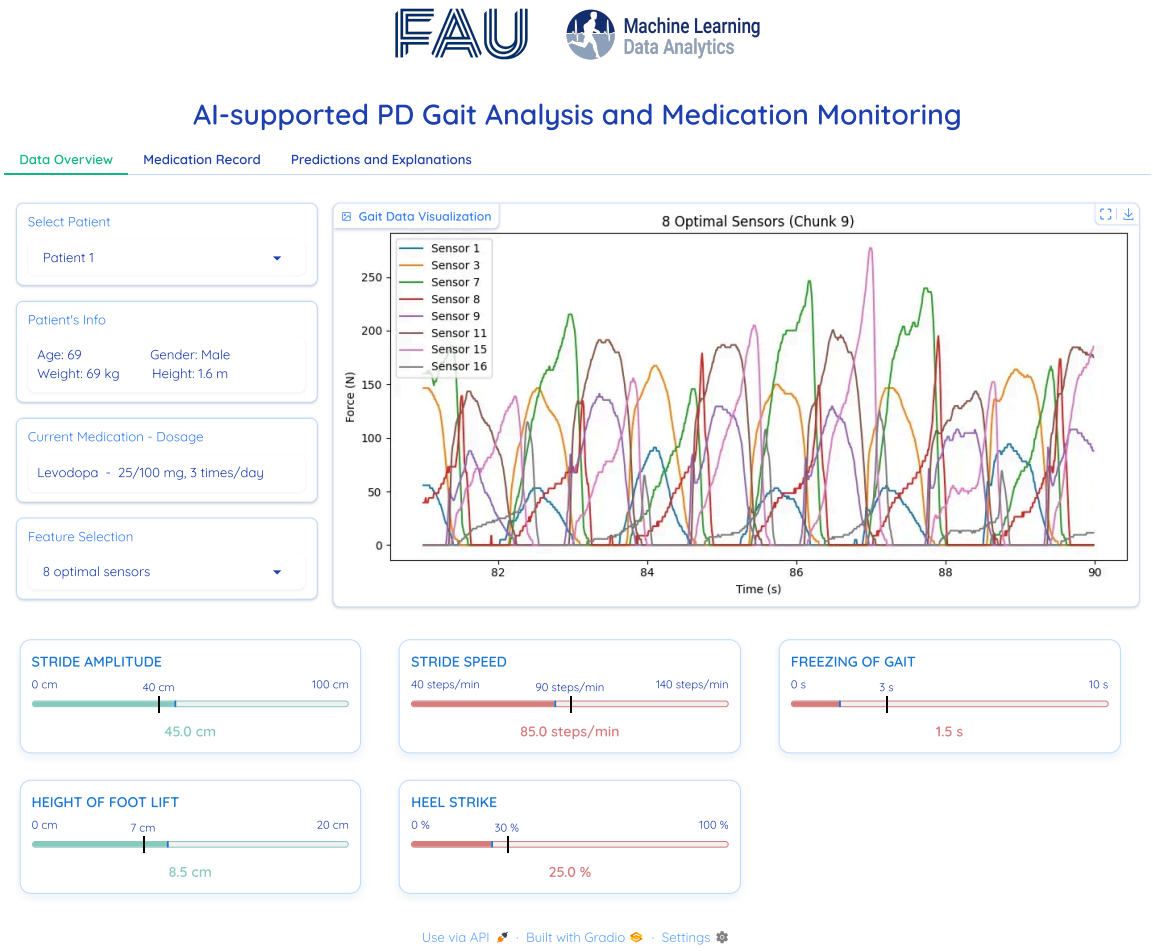

Figure 2: Overview of Gait Session Summary tab. This module displays per-test sensor signals from multiple foot-mounted IMUs, capturing dynamic gait activity within a selected time window. The left panel provides key patient information, current medication details, and feature selection options. Below the sensor plot, core gait metrics are shown with interactive reference scales. This visualization enables clinicians to assess patient-specific motor performance comprehensively and supports ongoing tracking and evaluation of treatment effectiveness.

2.2 Tab 2: Medication history

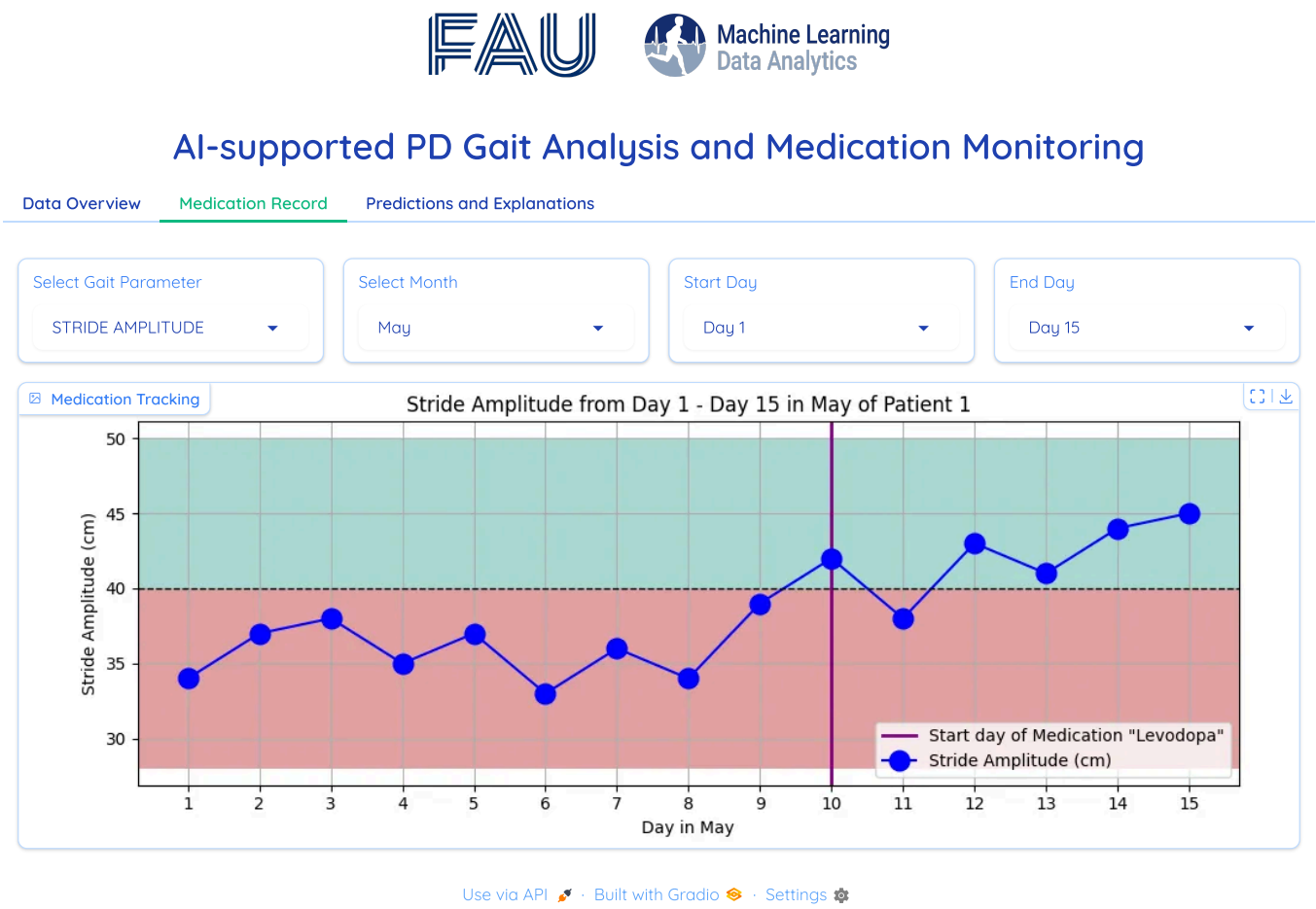

Figure 3: Overview of Treatment Trend View tab. This module displays longitudinal trends in selected gait metrics alongside treatment timelines. Clinicians can choose specific parameters and date ranges to explore how motor performance evolves before and after therapeutic interventions. By linking gait changes to medication events, the visualization supports interpretation of treatment response and facilitates personalized, data-informed clinical decisions.

2.3 Tab 3: Predictions and explanations

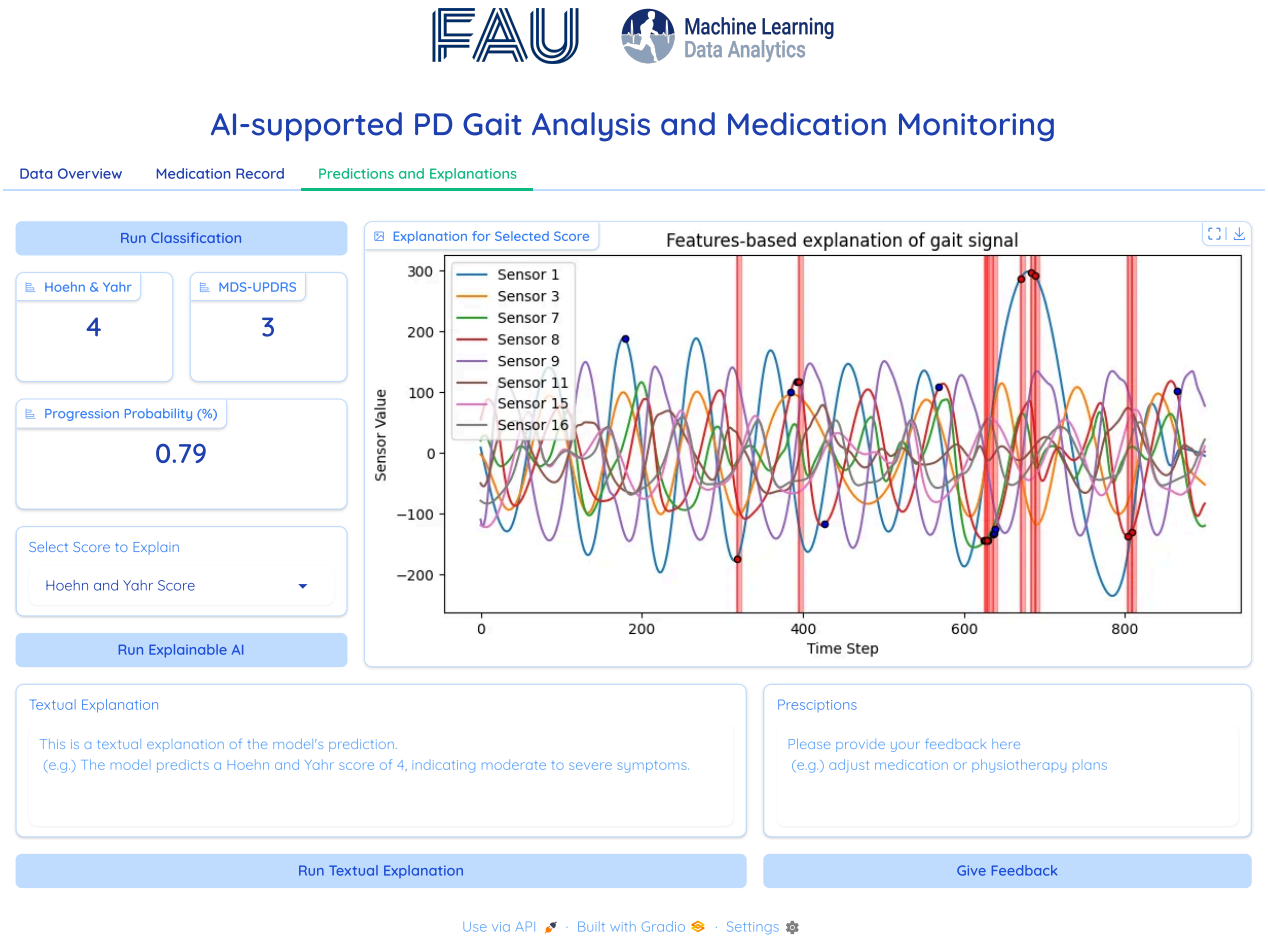

Figure 4: Overview of Predictive Insight and Explanation tab. This module presents model-generated predictions for clinical severity scores and progression probability based on gait data. Clinicians can select specific outcomes to explain and view sensor-based visualizations annotated with salient features influencing the result. A textual explanation generated by a locally hosted LLM provides clear, human-readable insight into the model's reasoning. The interface also includes space for clinician feedback, supporting review, refinement, and treatment planning. This design reflects core principles of contestable AI by enabling transparency, interpretability, and human-in-the-loop decision support.