Doctoral Landscape Award (DLA) project

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October 2027 start

World models for predictive control and optimization of chemical processes

This project aims to develop an advanced control framework that leverages time series foundation models and actionable world models to revolutionize chemical process control and real-time optimization. By utilizing large-scale pre-trained architectures to generalize across heterogeneous sensor streams, the proposed system is intended to mitigate data-scarcity bottlenecks and rapidly enable highly adaptive, zero-shot predictive control in highly nonlinear chemical manufacturing environments.