

Machine Learning Applications in BIPV Systems

Energy Technology Section, TU/e

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<https://www.tue.nl/en/research/research-groups/energy-technology/>

We foster community building through:

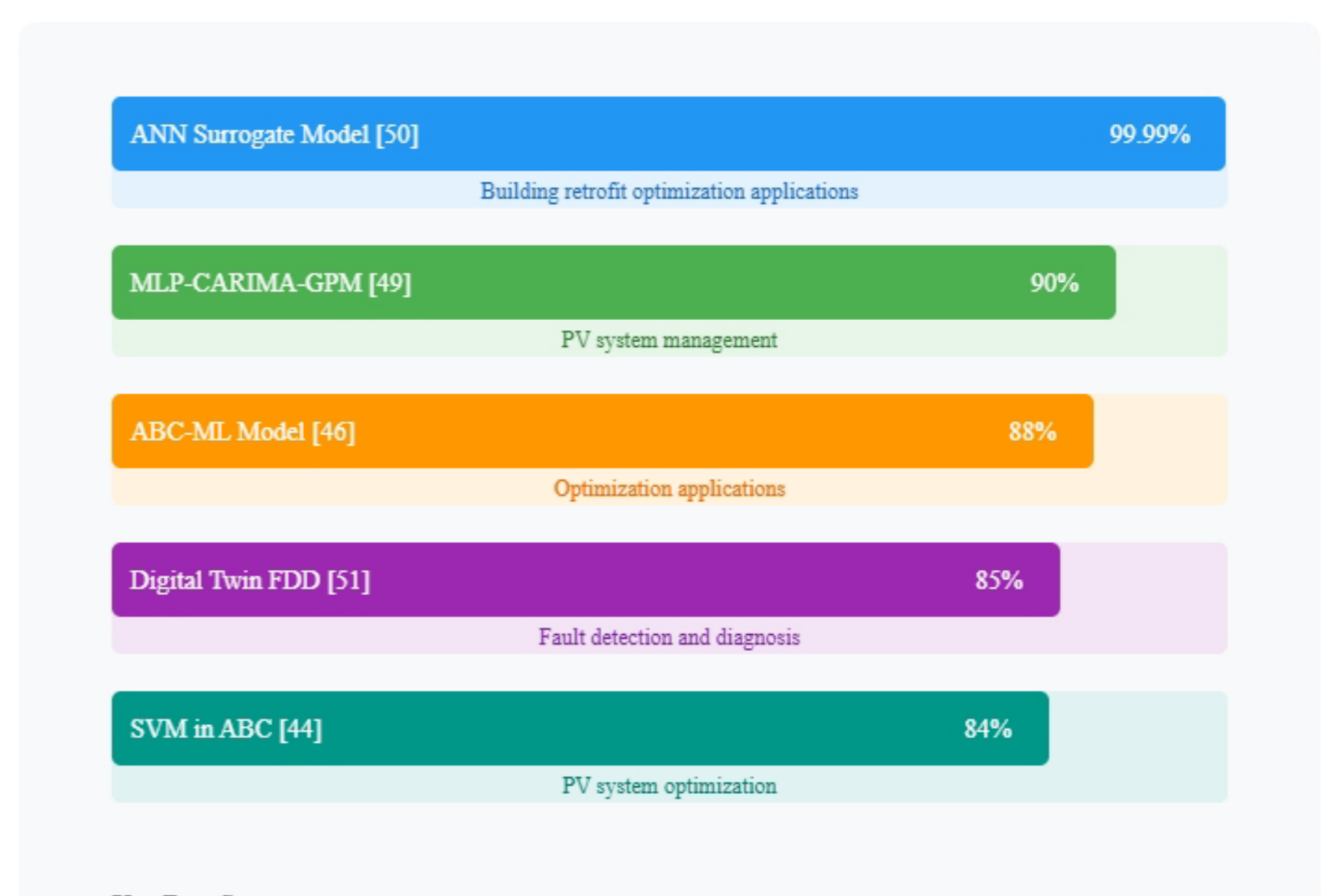
- Experiments & Advanced models for energy system performance prediction.
- Collaborative workshops & Regular community engagement.

Research Project

- Integrating ML with physical modeling to design and optimize Building-integrated Photovoltaics (BIPV) systems.
- Within HEat Robustness In relation To AGEing cities (HERITAGE) project.

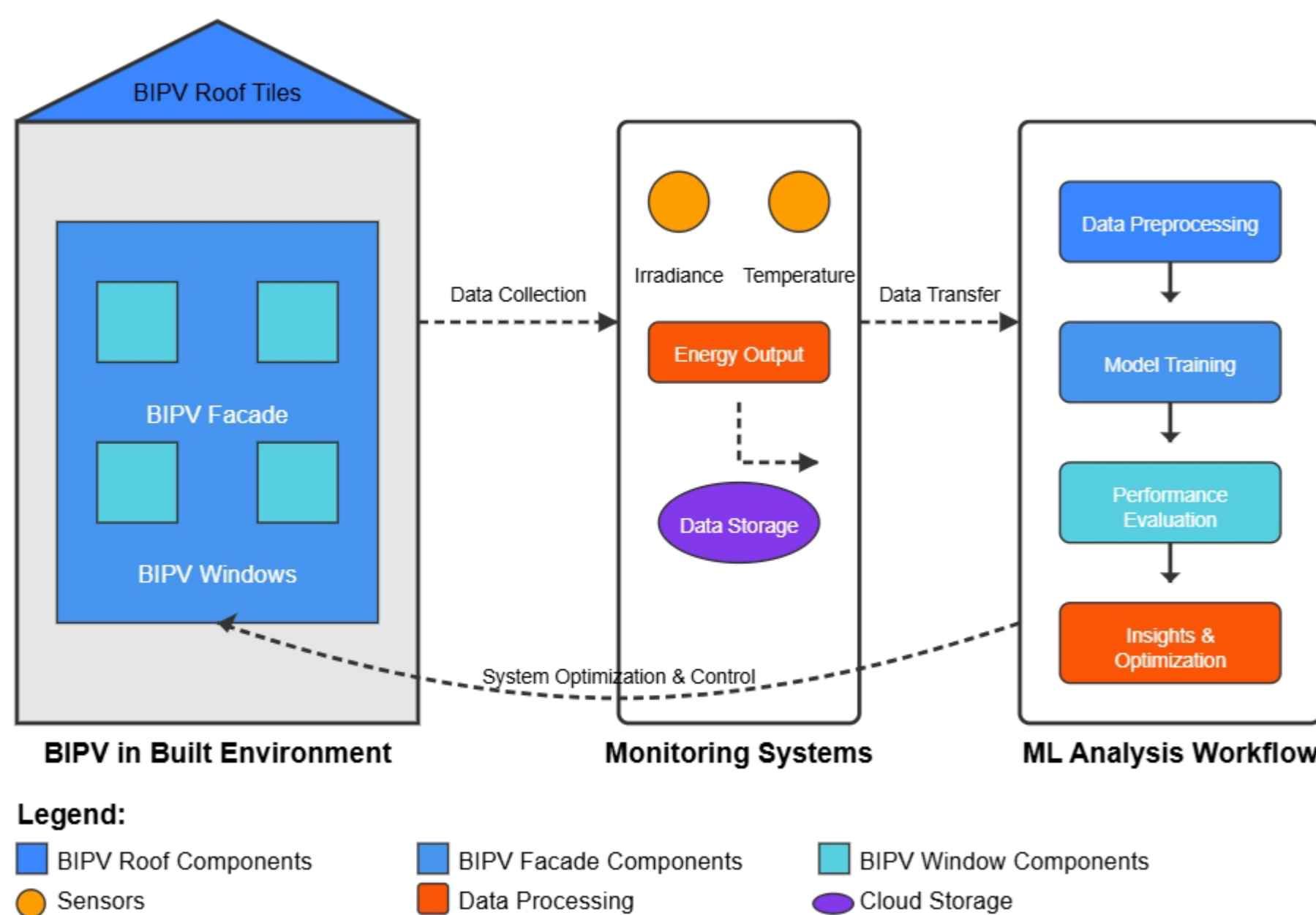
Significant Reduction in Computation Time Achieved by ML Models

Each model demonstrates substantial time savings in its specific application domain



Key Benefits:

- Enables real-time processing and rapid decision-making
- Significant reduction in computational overhead



Research Method

- Advanced ML algorithms for performance prediction.
- Physical modeling for system behavior analysis.
- Hybrid models that integrate multiple ML approaches.
- Digital twin implementation for real-time monitoring.

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