

AI for predicting adverse health events in the elderly through wearable devices

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MTN

JH AITC Aging Focus Pilot Core

Introduction

Challenge

- Elderly patients face high risk of adverse events
- Acute settings lack resources for continuous patient monitoring

Solution

- AI-driven system standardizes wearable device and EHR data
- Delivers real-time insights via intuitive clinical dashboards

Impact

- Reduces provider burden in resource-constrained environments
- From reactive to proactive care
- Being validated at two acute care centers

Objectives

- Predict adverse health events in elderly patients
- Enable continuous monitoring with AI-powered analytics

Technology

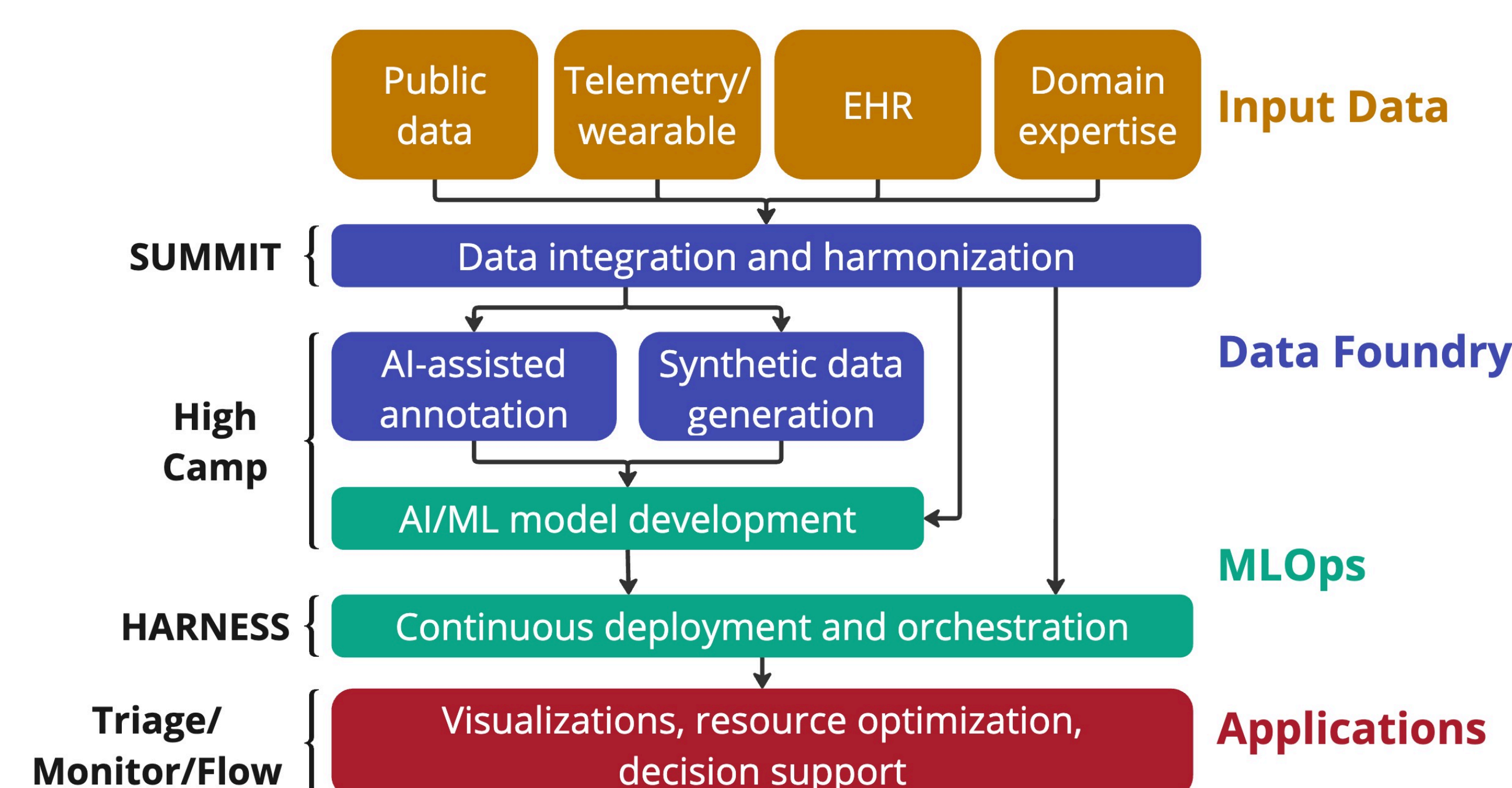
- Data harmonization engine for diverse wearable data
- Live monitoring solution

Success Metrics

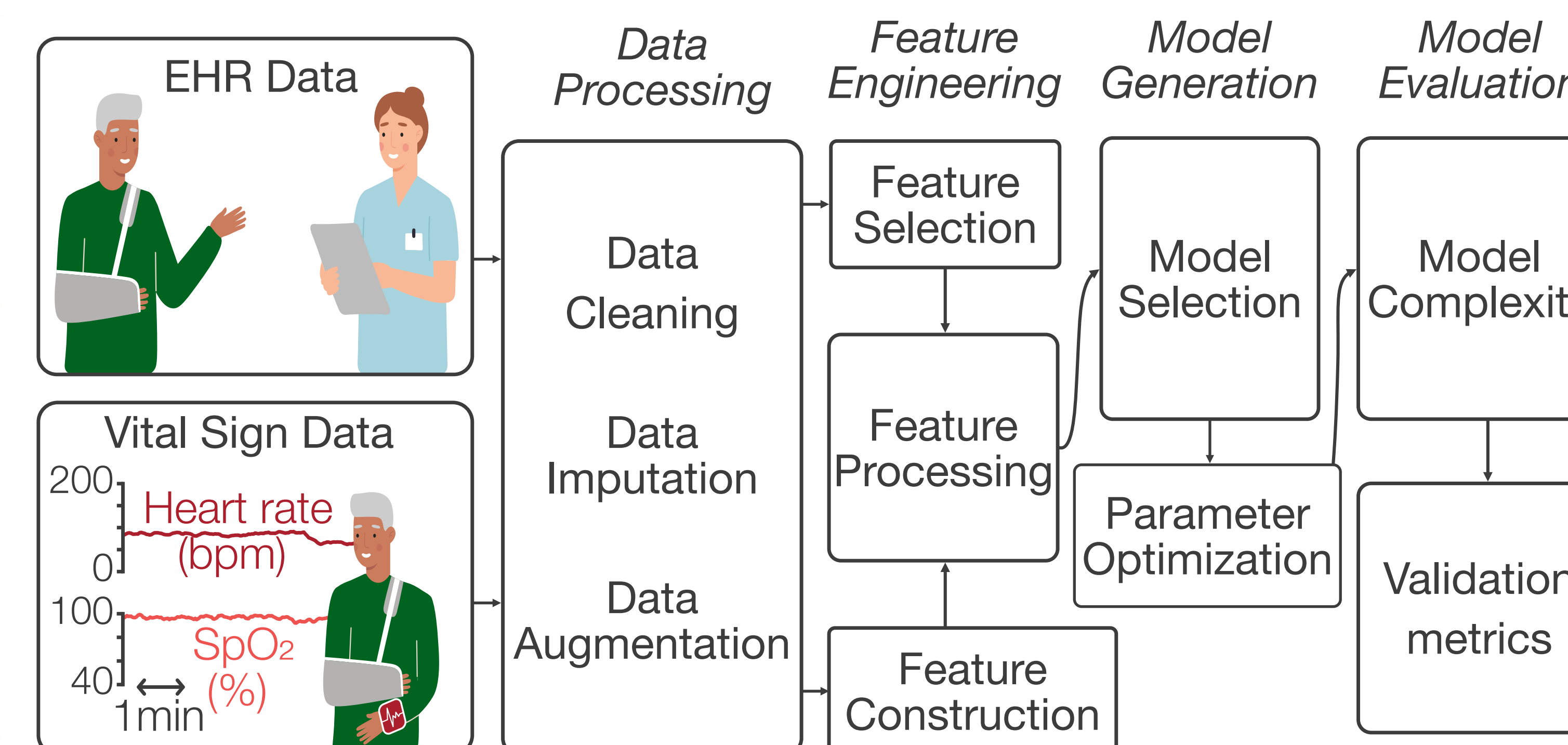
- Decrease staff monitoring burden
- Improve patient outcomes

Pilot Project Highlights

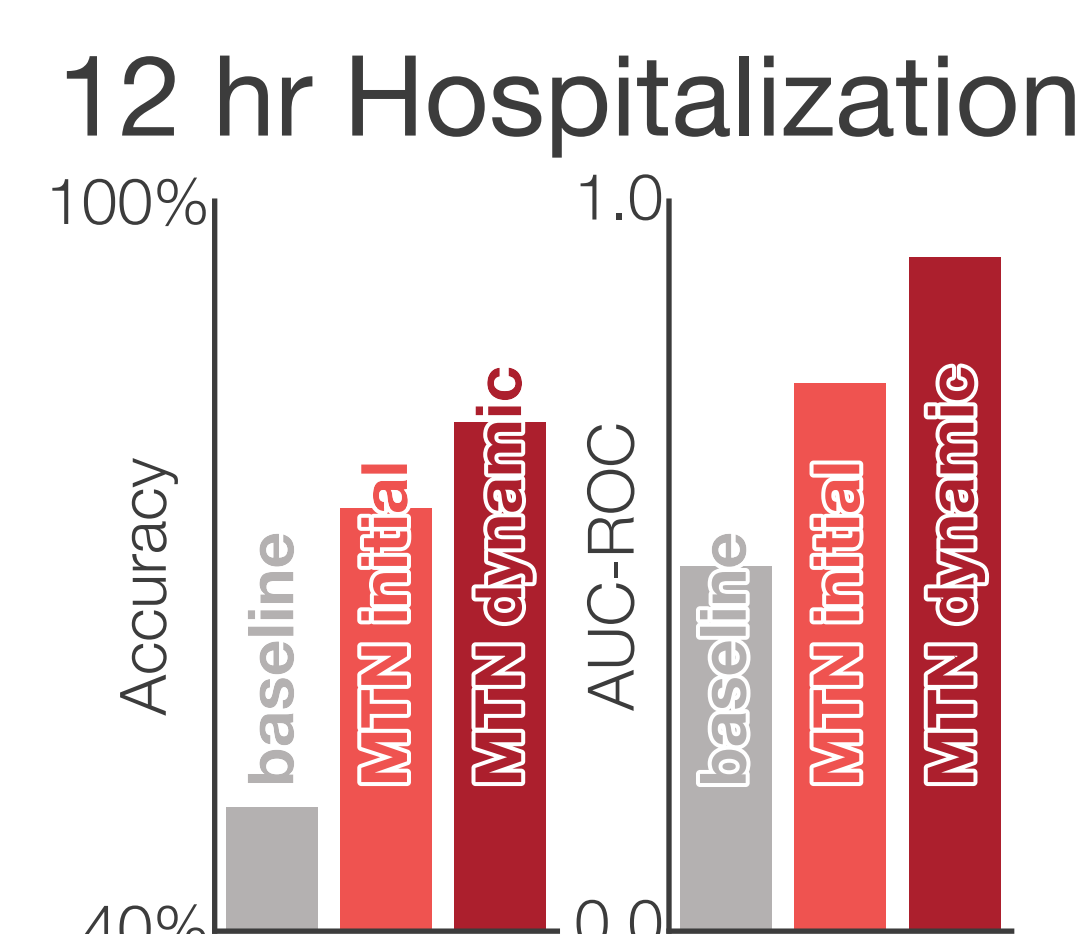
Tech Stack



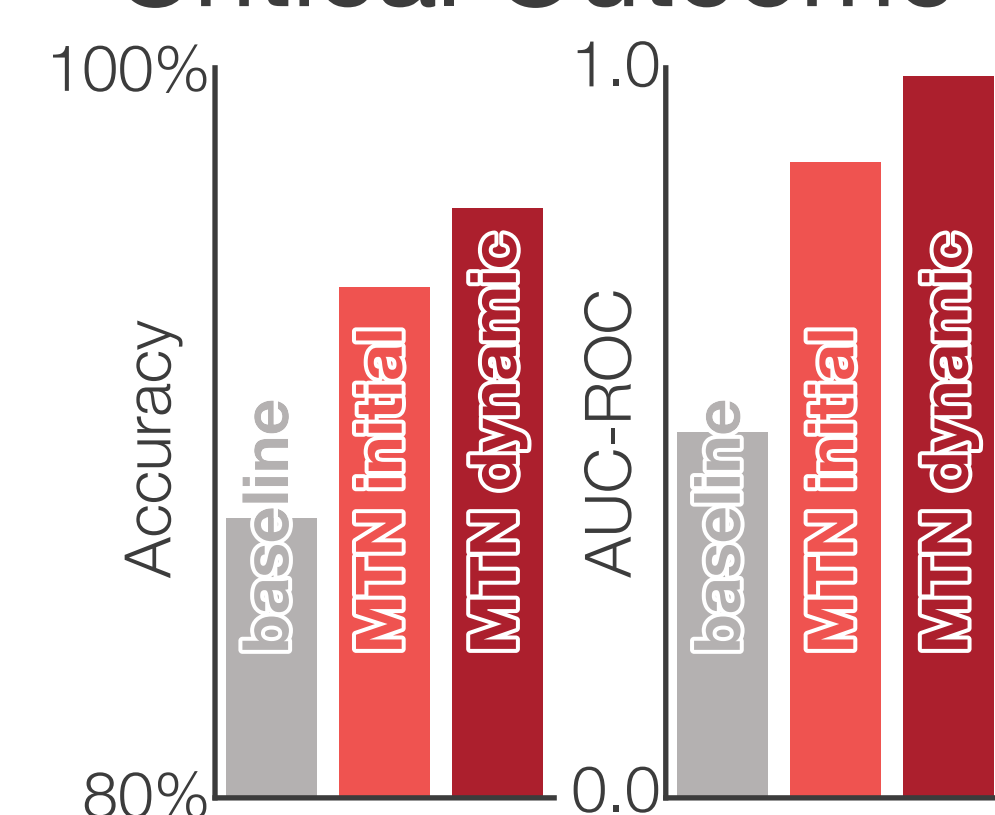
SUMMIT & High Camp Pipeline



Example Task Performance for High Camp Models



Critical Outcome*



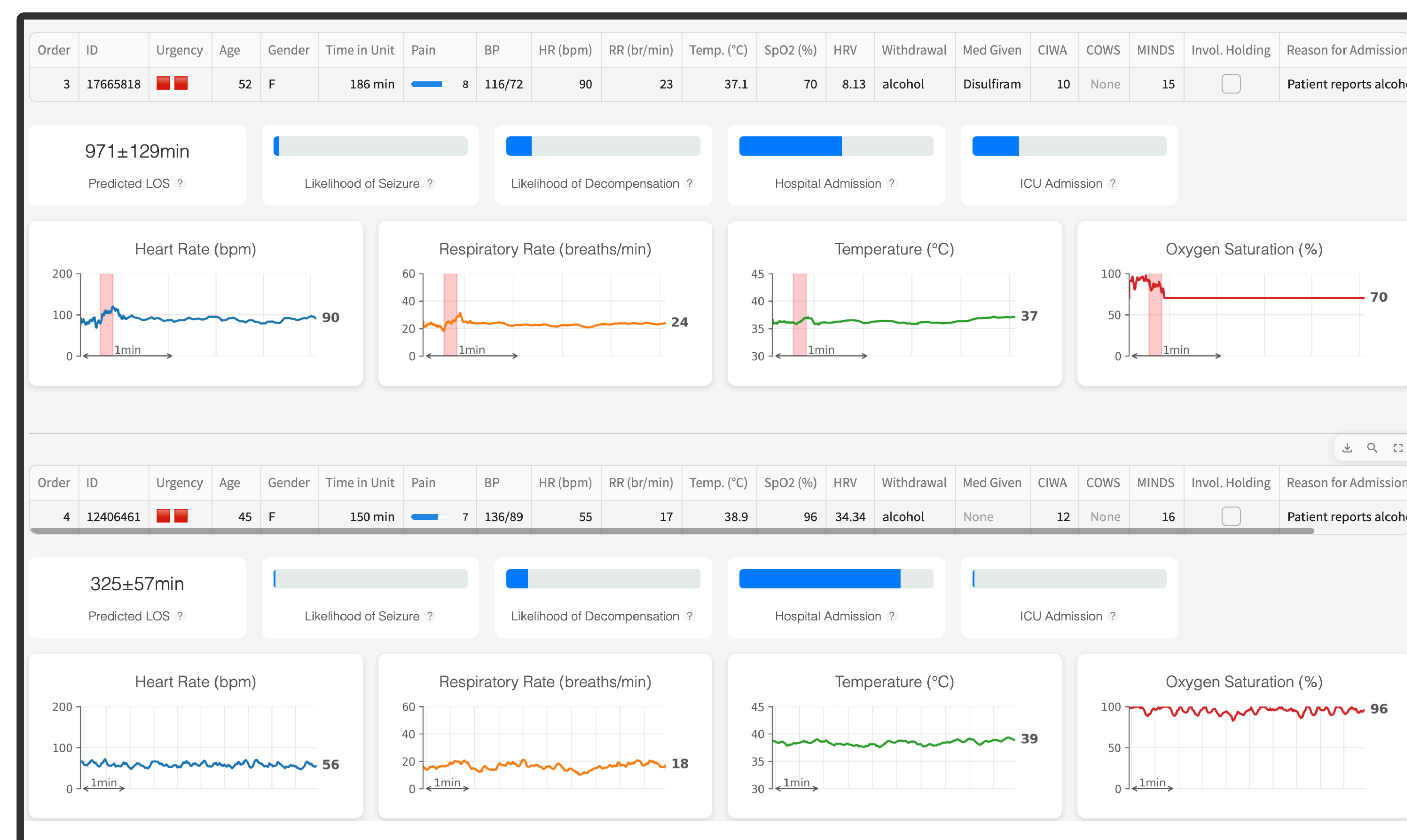
baseline prior model.

MTN initial model with no continuous vitals.

MTN dynamic model continuously updates using vital sign changes.

*Critical outcome is defined as ICU admission or mortality within 12 hours.

Vital Monitor Prototype



Features: Live monitoring - EHR integration - AI-driven analytics - Dynamic ranking - Resource allocation - Early detection of vital sign changes

Conclusion

Technical Achievements

- Integrated diverse data streams for reliable AI model input
- Developed real-time clinical monitoring capabilities
- Built working prototypes for clinical workflow integration

Pilot Implementation

Core technology ready for validation at two clinical sites to demonstrate real-world effectiveness.

Impact

- Transform periodic checks into continuous AI monitoring
- Reduce provider burden and enable early intervention
- Improve outcomes while optimizing resources

Acknowledgements