

# **RET Project: ML for Newborn Medical Sensors**

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## **Motivation**

- Early Detection of potential medical diseases in newborns.
- Time frame is within • hours of birth.
- Detect serious health ٠ conditions such as hypoxia or cerebral palsy.



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### **Current Status**

- Current Medical Baby Boot measures O2 and Heart rate.
- Build on previous ML ٠ studies performed on blood gas analysis of neonates during pregnancy complications.

### Machine learning pipeline for newborn screening

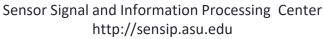
Data Preprocessing **Classification model**  Interpretable and Feature selection non-interpretable

Feature construction

- Essential modules
- classification methods Performance optimization

Data sampling

Optional modules



Pattern recognition

· Feature importance

Biomarker discovery

# **Our Research**

- Apply ML algorithms to predict CO<sub>2</sub>, pH, Glucose, and  $O_2$ **Biometric Data**.
- Simulating Sensor **Detection using Arduino** Uno Circuit Board for plants.
- Identify key features.
  - Use ML to create an optimal linear regression algorithm.



