# Personalized Prediction of Recurrent Stress Events Using Self-Supervised Learning on Multimodal Time-Series Data

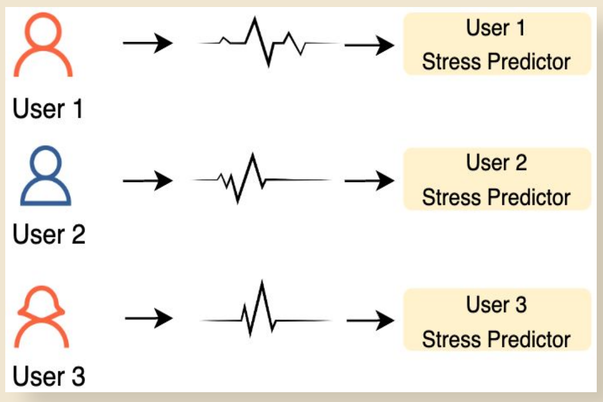
Tanvir Islam, Peter Washington
Information and Computer Sciences, University of Hawaii at Manoa

## Problem Statement

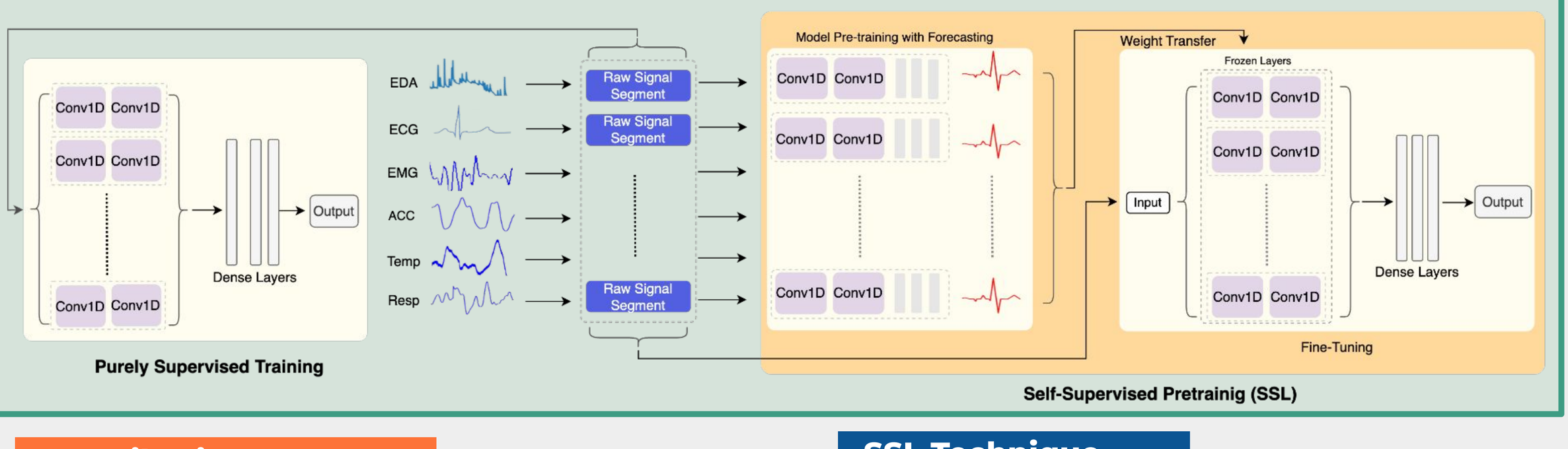
- Counter high-cost label collection
- Navigate individual stress variability
- Simplify feature design from diverse biosignals
- Manage subjectivity and sparse labeling

## Overview

**High level idea of the proposed methodology**



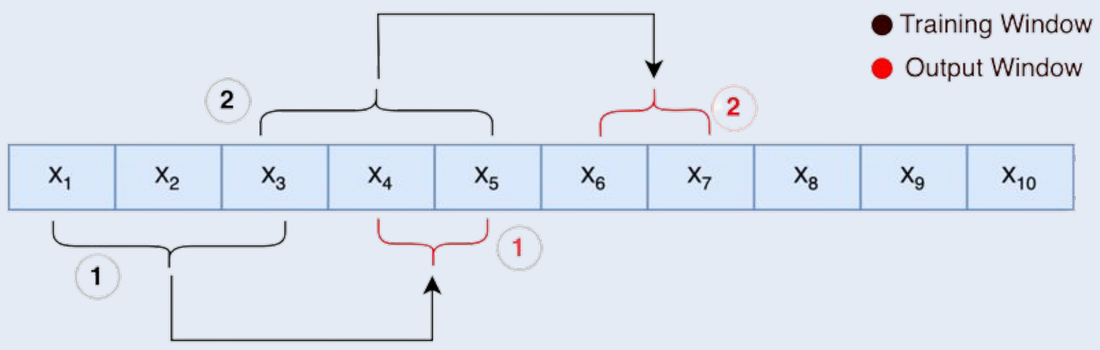

## Experimental Procedure




## Contribution Summary

- Harness biosignals for immediate stress detection
- Develop user-specific models that learn from diverse biosignals.
- Better prediction with less annotation through personalized, self-supervised models.

## SSL Technique




## Experimental Results




**Comparison of the performance between SSL pre-training and solely supervised training methods for a demonstrative user**

Acknowledgement: The technical support and advanced computing resources from University of Hawaii Information Technology Services – Cyberinfrastructure, funded in part by the National Science Foundation CC* awards # 2201428 and # 2232862 are gratefully acknowledged.