SMART MOOD TRACKING: MOOD ANALYSIS USING CONSUMER WEARABLES

Sanjiv Albert

PCSE Capstone Final Presentation

PURPOSE

This project explores the possibility of using apple watch health data to track general mood throughout a day.

Functionality

Extracts data from apple watch export

Filters and tags relevant data in heart rate and blood oxygen

Statistical Pre-Processing creates a dataset better suited for machine learning applications

Trains a neural network, evaluating with withheld data

Uses that Neural Network to determine mood based on a 30 sec interval of inputs

IMPLEMENTATION

- PyCharm Pro for Linux

- Native Python 3.11

- pickle

- Contextlib (XML parsing)

- Numpy & Statistics

- PyTorch (Modeling NN)

- Sklearn (Input Processing)

- WSL 2 with GPU passthrough

- DirectML AMD acceleration

- DirectML PyTorch package

Devices

- Apple Watch 4 and 6, to iPhone 14

- Desktop PC

VIDEO