Worksheet 2 (StepScan)

Topic 1: Center of Pressure (COP) Features – Biometrics Field

1) The aim of this worksheet is to review the COP features-based biometrics papers. We will implement the proposed features, in the following papers, in the next worksheets.
   a. P. Connor
      i. [2015] [C] Comparing and Combining Underfoot Pressure Features for Shod and Unshod Gait Biometrics
   b. Jung et al.
      i. [2004] [J] Dynamic Footprint-Based Person Recognition Method Using a Hidden Markov Model and a Neural Network
      ii. [2003] [C] Dynamic-Footprint Based Person Identification Using Mat-Type Pressure Sensor
      iii. [2013] [C] Person Recognition Method Using Sequential Walking Footprints via Overlapped Foot Shape and Center-of-Pressure Trajectory
   c. Qian et al.
      i. [2010] [J] People Identification Using Floor Pressure Sensing and Analysis
      ii. [2008] [C] People Identification Using Gait Via Floor Pressure Sensing and Analysis
   d. Zhang et al.
      i. [2009] [C] Footprint Tracking and Recognition Using a Pressure Sensing Floor
   e. P. Terrier
      i. [2020] [J] Gait Recognition via Deep Learning of the Center-of-Pressure Trajectory

Checkpoint

1) What features (dimensionality reduction methods) were extracted from the COP time series in these papers?
2) How can we use 2D COP trajectories to identify left and right footsteps?