

Instantaneous Activity Recognition

Short Term Activities (STA)

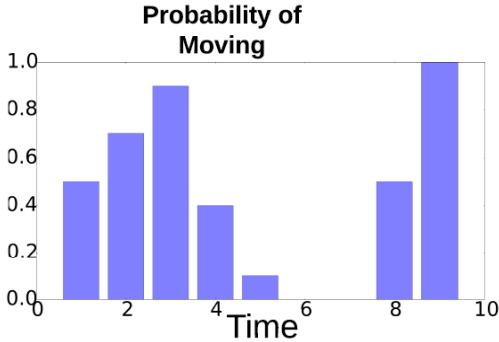
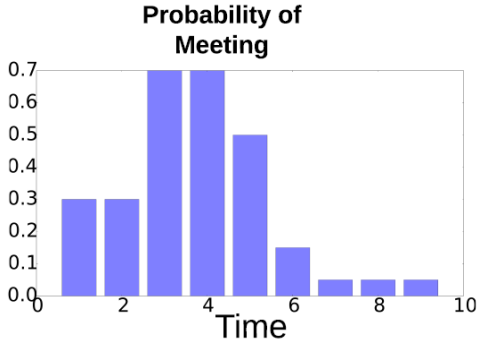
0.5::happensAt(walking(id1) = true, 1)
 0.7::happensAt(walking(id2) = true, 1)
 0.92::happensAt(walking(id3) = true, 2)
 ...

LTA initiation rules

Prob-EC

LTA termination rules

Probabilistic Instantaneous Long Term Activities (LTA)



----- [1, 5] [0, 4] ----- ----- [7, 9]
 ----- [3, 6] [1, 5] -----

Interval-based Activity Recognition

$P([1,5]) = (0.3+0.3+0.7+0.7+0.5)/5 = 0.5$
 $Cred([1,5]) = P([1,5]) * length([1,5]) = 0.5 * 5 = 2.5$

$P([0,4]) = (0+0.5+0.7+0.9+0.4)/5 = 0.5$
 $Cred([0,4]) = P([0,4]) * length([0,4]) = 0.5 * 5 = 2.5$

$P([3,6]) = (0.7+0.7+0.5+0.1)/4 = 0.5$
 $Cred([3,6]) = P([3,6]) * length([3,6]) = 0.5 * 4 = 2$

$P([1,5]) = (0.5+0.7+0.9+0.4+0.1)/5 = 0.52$
 $Cred([1,5]) = P([1,5]) * length([1,5]) = 0.52 * 5 = 2.6$

$P([7,9]) = (0+0.5+1)/3 = 0.5$
 $Cred([7,9]) = P([7,9]) * length([7,9]) = 0.5 * 3 = 1.5$

Probabilistic Maximal Intervals

User's Threshold

Probabilistic Interval-based Event Calculus