Algorithm 1 Assign Points to Clusters

given $\beta > 0$, $-\ell\ell(i, j)$ = negative log likelihood of point i when it is assigned to cluster j.
initialize PrevCost = list of K zeros.
    CurrCost = list of K zeros.
    PrevPath = list of K empty lists.
    CurrPath = list of K empty lists.
for $i = 1, \ldots, T$ **do**
    for $j = 1, \ldots, K$ **do**
        MinIndex = index of minimum value of PrevCost.
        if PrevCost[MinIndex] + $\beta >$ PrevCost[j] **then**
            CurrCost[j] = PrevCost[j] $-\ell\ell(i, j)$.
            CurrPath[j] = PrevPath[j].append[j].
        else
            CurrCost[j] = PrevCost[minIndex] + $\beta - \ell\ell(i, j)$.
            CurrPath[j] = PrevPath[minIndex].append[j].
    PrevCost = CurrCost.
    PrevPath = CurrPath.
FinalMinIndex = index of minimum value of CurrCost.
FinalPath = CurrPath[FinalMinIndex].
return FinalPath.