

```
void SENNA_nn_viterbi(int *path, float *init, float *transition, float *emission, int N, int T)
{
    float *delta, *deltap;
    int *phi;
    int i, j, t;

    /* misc allocations */
    delta = SENNA_malloc(sizeof(float), N);
    deltap = SENNA_malloc(sizeof(float), N);
    phi = SENNA_malloc(sizeof(float), N*T);

    /* init */
    for(i = 0; i < N; i++)
        deltap[i] = init[i] + emission[i];

    /* recursion */
    for(t = 1; t < T; t++)
    {
        float *deltan = delta;
        for(j = 0; j < N; j++)
        {
            float maxValue = -FLT_MAX;
            int maxIndex = 0;
            for(i = 0; i < N; i++)
            {
                float z = deltap[i] + transition[i+j*N];
                if(z > maxValue)
                {
                    maxValue = z;
                    maxIndex = i;
                }
            }
        }
    }
}
```