

CS 495/595 –Introduction to Data Mining, HW4

1. (40 pts) Consider the following 2 time series. Fill the DTW matrix below using the given time series.

Q: 1, 0, 3, 3, 6, 4, 7, 6, 8

P: 1, 3, 2, 4, 4, 6, 5, 8, 7

7									
8									
5									
6									
4									
4									
2									
3									
1									
	1	0	3	3	6	4	7	6	8

- a) Calculate the optimum DTW path and the DTW distance between the 2 time series.
 - b) Implement the DTW solver for above problem using any language you are comfortable with. Assume that your code takes 2 time series lists (for example, P and Q above) as an input and populate the DTW matrix, visualize it and then output the optimal DTW path and DTW distance.
2. **(20 points)** Describe your thoughts about what you think it means to work as a software engineer (or cybersecurity practitioner or any other title you prefer). You may therefore – if you like – be very personal and describe your own plans and fears for your future career, criticism/praise for your education, skills you need to develop further, and soon. This homework question is intended to encourage you to reflect about yourself and your future career, and will therefore be graded generously!

What to turn in:

Follow the naming convention: **Lastname-hw4.pdf** should contain answers to all above questions including your code for part (b). Make sure your name is printed on top of the pdf document.

Submit your pdf file to Blackboard. **Due: April 26 (Sunday) 11.59pm**