

INFORMATION RETRIEVAL

HOMEWORK EXERCISES L09. LEARNING TO RANK

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EXERCISE 1

- IIR exercise 15.7: Plot the first 7 rows of Table 15.3 in the α - ω plane to produce a figure like that in Figure 15.7.

EXERCISE 2

- IIR exercise 15.8: Write down the equation of a line in the α - ω plane separating the Rs from the Ns.

EXERCISE 3

IIR exercise 15.9: Give a training example (consisting of values for α , ω and the relevance judgment) that when added to the training set makes it impossible to separate the R's from the N's using a line in the α - ω plane.

EXERCISE 4

1. For the following two model outputs, compute the
 - a. Pointwise loss (squared regression loss)
 - b. Pairwise loss (hinge loss)

	True: $rel_q(d)$	Model A output: $score_A(q, d)$	Model B output: $score_B(q, d)$
d1	1	0.2	0.6
d2	1	0.1	0.8
d3	0	0.1	0.2
d4	0	0.1	0.4

EXERCISE 4

2. If you rank the documents based on the system scores, which ranking is better
 - a. according to the pointwise loss function
 - b. according to the pairwise loss function
 - c. according to you based on the true relevance values