Written Problems (40%)

DHS problems 3.13, 3.29, 3.31, 3.43. In problem 3.43, the “optimal subspace” is a linear subspace \( \vec{y} = W^T \vec{x} \), where \( \dim(\vec{x}) = d \) but \( \dim(\vec{y}) \leq \min(d, c - 1) \), such that the MAP classifier for \( \vec{x} \) can be written as a function of \( \vec{y} \).

Library Problem (20%)

Same problem description as in homework 1, but with a different paper (of your choice).

Prescribed Computer Problem (20%)

Perform either DHS computer exercise 3.11 or 3.12. Provide your results in the format of a one-page conference paper, with pseudocode or flowchart in an appendix.

Open-Ended Computer Problem (20%)

Perform either DHS computer exercise 3.11 or 3.12 with real-world data. Test two or more versions of part (a), with different measurements hidden. Comment on the difference. Present your results in the format of a one-page conference paper. If you used different code for the prescribed and open-ended computer problems, then provide your code for this problem as an appendix; if you used the same code, you need not list it again.