

Pattern Classification and Machine Learning

FEN3202

Discussion points for Lecture 5

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I. DISCUSSION AGENDA

1) Linear Models for Classification **Chapter 4 of the text book.**

Discussion Points: What is the classification objective, decision boundary, three distinct approaches of classification, equation 4.2, activation function, equation 4.3, generalized linear models.

Discriminant functions (Section 4.1): definition; Two classes (section 4.1.1), equation 4.4, orientation of decision surface by \mathbf{w} , equation 4.8;

Multiple classes (section 4.1.2), one-versus-rest and one-versus-one classifiers, Figure 4.2, K -class discriminant, equation 4.9-4.12, singly connected and convex sets, Figure 4.3.

Least-squares classification (section 4.1.3), equation 4.13-4.19, Problem with Least-squares, Figure 4.4, Figure 4.5, why least-squares fail?