

# Pattern Recognition. Overview

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# Outline

Pattern  
Recognition.  
Overview

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Some  
probability  
distribution

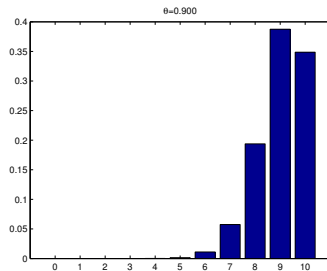
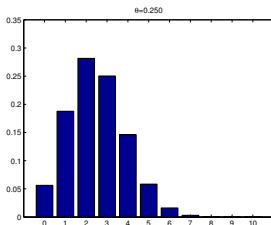
## 1 Some probability distribution

# Binomial distribution plots

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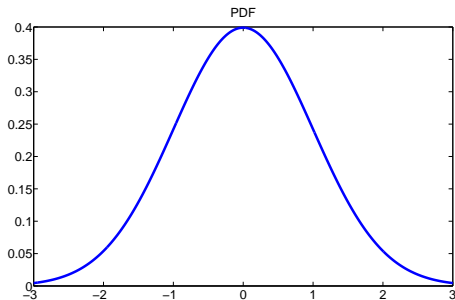
Binomial distribution with  $n = 10$  and  $\theta \in \{0.25, 0.9\}$

# Gaussian pdf

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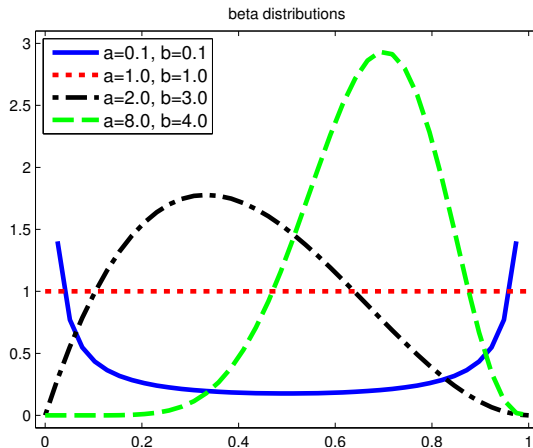
Gaussia distribution with mean 0 and variance 1

# Beta distribution

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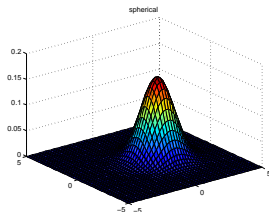
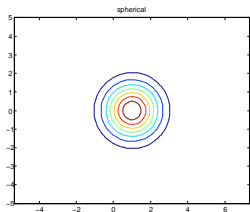
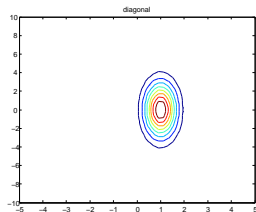
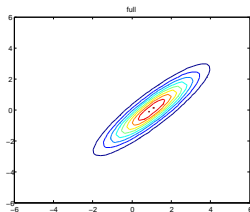
Beta distributions

# 2D Gaussian plots

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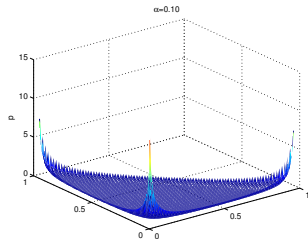
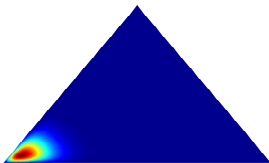
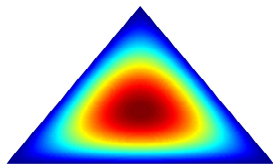
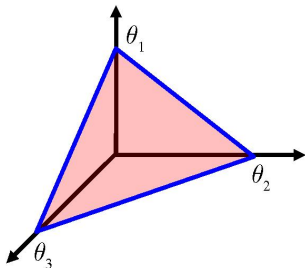
Level set for (a) Full covariance matrix, (b) diagonal covariance matrix, (c) spherical covariance matrix, (d) surface plot of spherical gaussian

# Dirichlet distribution for $K=3$

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Level set for (a) Simplex(triangular surface), (b) Dirichlet density when  $\alpha = (2, 2, 2)$ , (c)  $\alpha = (20, 2, 2)$ , (d)  $\alpha = (.1, .1, .1)$

# Thank you!