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## Simulation

- Generate two large datasets from two bivariate normals with identity covariance matrix and mean vectors  $\mu_1 = (0, 0)'$  and  $\mu_2 = (1, 1)'$ ; each dataset has 1000 observations.
- Plot a 3D plot for the pdf of each.
- Plot the LLR as a function of the feature vector  $X$ .
- Plot the histogram of  $h(x|\mathcal{G}_i), i = 1, 2$ .