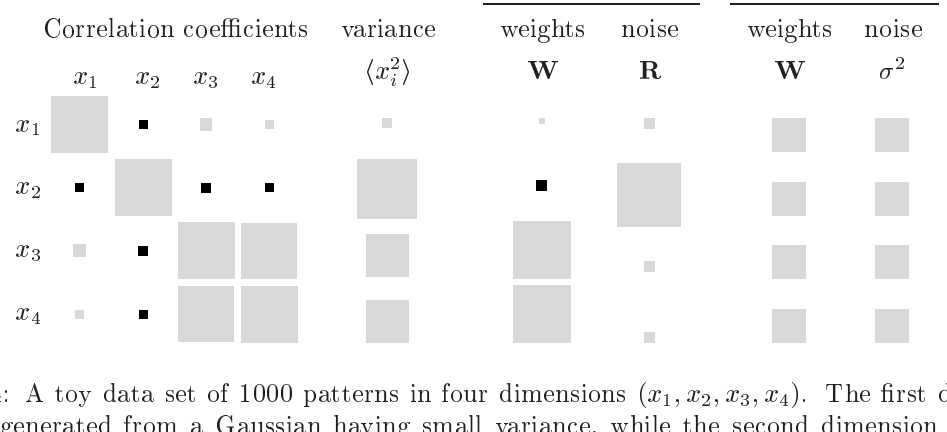

Figure 2.4: A toy data set of 1000 patterns in four dimensions (x_1, x_2, x_3, x_4). The first dimension has been generated from a Gaussian having small variance, while the second dimension has been generated from a Gaussian with high variance. The first two dimensions are independent of the other dimensions. The third and fourth dimension are highly correlated and have been generated from the same values (Gaussian with medium-valued variance) corrupted by small Gaussian noise. This can be seen from the Hinton diagrams with gray for positive and black for negative values and the size of the square proportional to the value of the corresponding parameter. The first two diagrams represent the correlation coefficients and the variance of the data. This data was used to train a FA and a PPCA model with one factor ($\ell = 1$). The other Hinton diagrams shown correspond to the estimated 4×1 factor loading $\mathbf{W}$ and the 4×1 diagonal of the estimated noise covariance $\mathbf{R}$ for both models.