Process Monitoring

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Chapter 3a
Principal Component Analysis

Process Monitoring
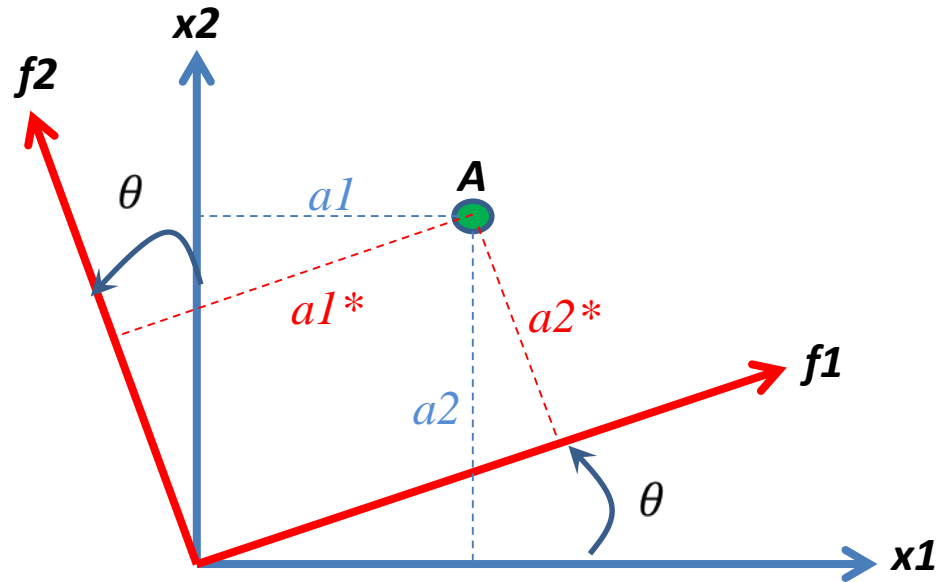
Figure A

- From Figure A, prove that the new coordinates **A** (*a1**, *a2**) in terms of the new basis vectors **f**1, **f**2 are given by

$$\begin{bmatrix} a1^* \\ a2^* \end{bmatrix} = \begin{bmatrix} cos\theta & sin\theta \\ -sin\theta & cos\theta \end{bmatrix} \begin{bmatrix} a1 \\ a2 \end{bmatrix}$$

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References

- Green, P.E., and Carroll, J.D., (1976). *Mathematical Tools for Applied Multivariate Analysis.* New York, USA: Academic Press.

- Jackson, J.E., (1991). *A User's Guide To Principal Components.* John Wiley and Sons. USA.

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Authors Information

Credit to the authors:

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