
1 Orthogonality

Learning Outcomes

After completing this chapter, students should be able to do the following.

- Discuss orthogonal and orthonormal bases, Gram-Schmidt orthogonalization, orthogonal complements and projections.
- Explain how orthogonal projections relate to least square approximations.
- Discuss general inner product spaces and symmetric matrices, and associated norms.
- Discuss the singular value decomposition of a matrix.