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4.1.3 What you will learn

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4.1.3 What you will Learn

Upon completion of this unit, you should be able to

- Apply matrix vector multiplication to predict the probability of future states in a Markov process.
- Make use of partitioning to perform matrix vector multiplication.
- Transpose a partitioned matrix.
- Partition conformally, ensuring that the size of the matrices and vectors match so that matrix-vector multiplication works.
- Take advantage of special structures to perform matrix-vector multiplication with triangular and symmetric matrices.
- Express and implement various matrix-vector multiplication algorithms using the FLAME notation and FLAME@lab (MATLAB).
- Make connections between the composition of linear transformations and matrix-matrix multiplication.
- Compute a matrix-matrix multiplication.
- Recognize scalars and column/row vectors as special cases of matrices.
- Compute common vector-vector and matrix-vector operations as special cases of matrix-matrix multiplication.
- Compute an outer product xy^T as a special case of matrix-matrix multiplication and recognize that
 1. The rows of the resulting matrix are scalar multiples of y^T .
 2. The columns of the resulting matrix are scalar multiples of x .

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