

CPSC 319
Data Structures, Algorithms, and Their Applications
Winter 2024

Introduction to Graphs

- Graphs are fundamental data structures used to represent connections between pairs of objects.
- They consist of vertices (nodes) and edges (connections between vertices).

Graph Representation

- Adjacency Matrix:
A 2D array where the presence of an edge between two vertices is indicated by a value.
- Adjacency List:
Each vertex has a list of adjacent vertices, representing connections.

Graph Traversal Algorithms

- Breadth-First Search (BFS):
Explores all vertices at the current depth level before moving to the next level.
- Depth-First Search (DFS):
Goes as deep as possible along each branch before backtracking.