Approximation Algorithms

K. Subramani, LCSEE, West Virginia University

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1. Definition of Approximation schemes for maximization and minimization problems. Include FPTAS.

2. The Knapsack problem.

    (a) Problem definition.
    (b) The continuous case.
    (c) The greedy algorithm.
    (d) The failure of greedy for the integral case.
    (e) A pseudo-polynomial time algorithm and its analysis.
    (f) The $(1 - \epsilon) \cdot OPT$ algorithm.