

• Amort. Analysis

- purpose of am. an.
- methods (their characteristics)

- * aggregate
- * accounting
- * potential

- applications to
 - * stack oper.
 - * Binary counter
 - * dynamic table

• Parallel Algo

- Models

- * EREW * CREW
- * ERCW * CRCW

- CW

- * common * priority
- * arbitrary * combination

- Algorithms

- * list ranking
- * prefix computation
- * identify the roots
- * find maximum

- * Simulate CRCW by EREW
- * 6-coloring of a L.L.
- * maximum Ind. Set of a L.L.

• Complexity

- definitions of
 - class P
 - class NP
 - certificate
 - polyn. reduction
 - class NP-hard
 - class NP-complete
- know reductions
 - $3Col \leq_p Col$
 - $3SAT \leq_p IS$
 - $IS \leq_p clique$
 - $IS \leq_p VC$
- know proofs for
 - $3SAT \leq_p IS$
 - VC is NP-complete
 - clique is NP-complete

• Appr. Algor.

- * approximability (basic concepts)
- * VC (2-appr)
- * TSP with Δ -inequal. (2-appr)
- * Set Cover ($\ln |X|$ -appr.)
- * Bin packing (2-appr.)
- * No constant appr. for TSP w/o Δ -inequal. in polyn. time unless $P=NP$.

} problem
} algor.
} proof for
} appr. bounds

• Flow and matching

- Max flow problem defin.
- Ford-Fulk, algo
 - * resid. netw * complexity
 - * aug. path * improvements
- correctness theorem (min-cut = max flow)
 - * def. of min cut

- ~~- Max bipart. matching defin.~~
- ~~- Max bipart. matching algo via max flow~~
- ~~* reduction~~