

Faculty of Computer Science

CS6999 Reading Course

Quantum Computation and Quantum Information

By

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Monday, February 10th, 2003

3:30 p.m.

ITC317

STUDENTS ARE ENCOURAGED TO ATTEND

Quantum computations are known to solve some exponentially hard problems in polynomial time. This makes them challenging and interesting to investigate. Although the actual (physical) quantum computer implementation industry is far behind (the most recent quantum computer has only 7 working bits), it is interesting to see what could be done with the "large size" quantum computers.

Quantum computers are based on quantum physics (mechanics), which totally differs from the Newton mechanics. Thus, the lecture will concentrate on introducing quantum computers to the audience and explain what works and what does not. The power of quantum computers will be illustrated with Shor's algorithm, one of the most useful and famous quantum algorithms.