—— *Recent Publications by Faculties of NCTU*

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Computer industries in India

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This paper discusses the successive stages involved in the growth of computer industries in India through research and development efforts put in at the Bhabha Atomic Research Center (abbreviated BARC), and later by the Computer Group of the Electronics Corporation of India Limited (abbreviated ECIL), a Government of India undertaking under the Department of Atomic Energy since its inception in the year 1967, and also the current status of this highly sophisticated self-supporting indigenous technology in meeting the country's everescalating computational demands, and in fostering the country's growth and economy. The paper briefly reviews the ambitious programs of ECIL in the span of last ten years, and outlines the technical details of the various systems developed and marketed by ECIL, starting wity the system TDC-12 that used second generation discrete component technology, including the more reliable third generation (IC) systems TDC-312, TDC-316, and the new medium large 32 bit system TDC-332 presently under advanced stage of development. The technical details of the analog computer AC-20, hybrid computers AC-20H, AC-80H/10, and of the fourth generation microcomputer Micro 78 developed by ECIL are also discussed, and standard input-output devices manufactured at ECIL are mentioned. The different ECIL systems presently in use including the real-time systems are briefly referred to.

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Magnitude ordering of degree complements of certain node pairs in an undirected graph and an algorithm to find a class of maximal subgraphs

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An undirected or a symmetric graph consists of a set of nodes and a set of non-oriented edges connecting between pairs of nodes. In widely differing disciplines of science and engineering, symmetric graphs find important uses. In many of these application areas, an often encountered problem is that of finding all the maximal complete subgraphs of a symmetric graph. In this paper, borrowing the concept of strong connectedness in a nonsymmetric graph, the idea of minimally strongly connected (MSC) and maximal minimally strongly connected (MMSC) subgraphs in a symmetric graph is introduced. The MMSC subgraphs play a kind of role identical to that played by maximal complete subgraphs in symmetric graphs. Many important properties of MMSC subgraphs are discussed in the paper, and an explicit, computer-oriented algorithm is developed for finding all the MMSC subgraphs, given an undirected graph.