

**Corso di Calcolatori Elettronici I**

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**Il calcolatore elettronico:  
breve cenni storici**

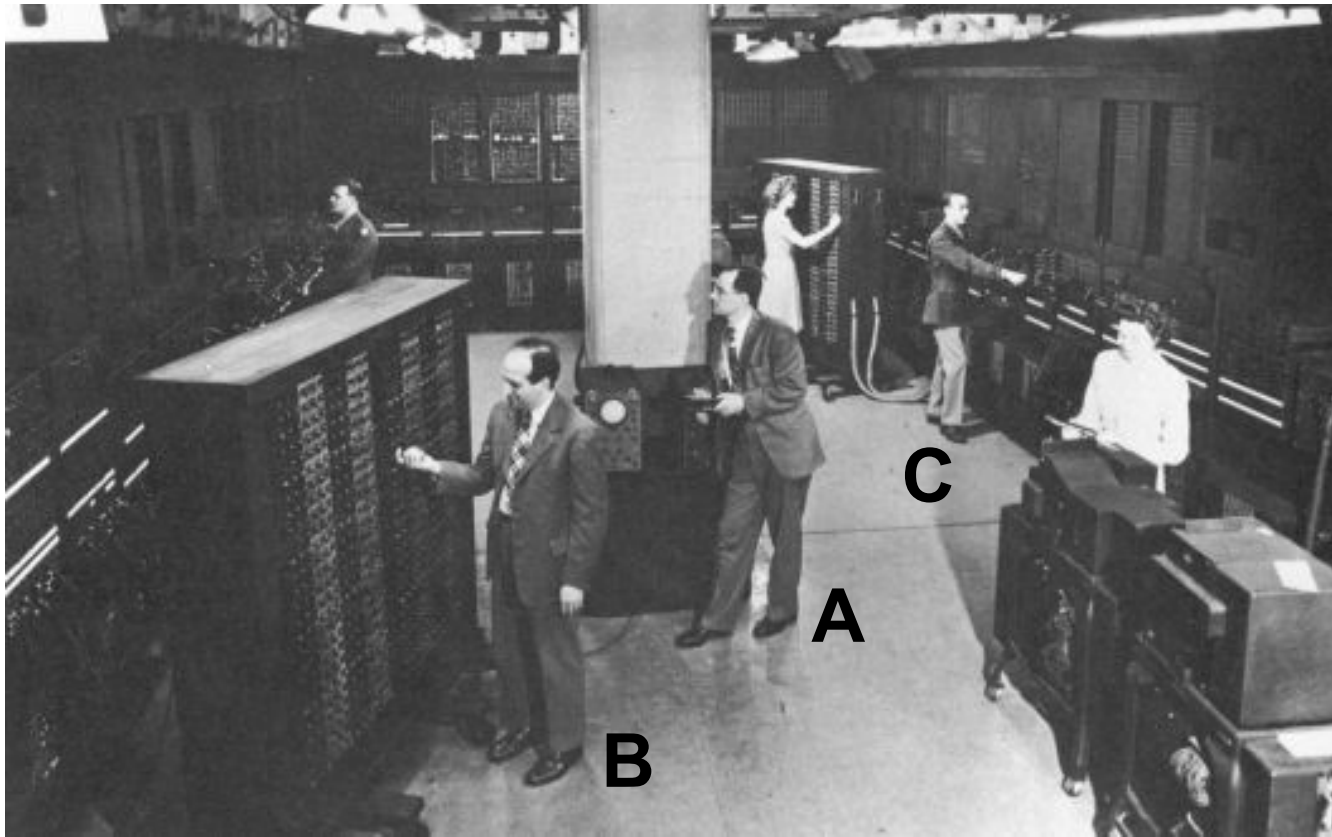
**ing. Alessandro Cilardo**

Corso di Laurea in Ingegneria Biomedica

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# ENIAC

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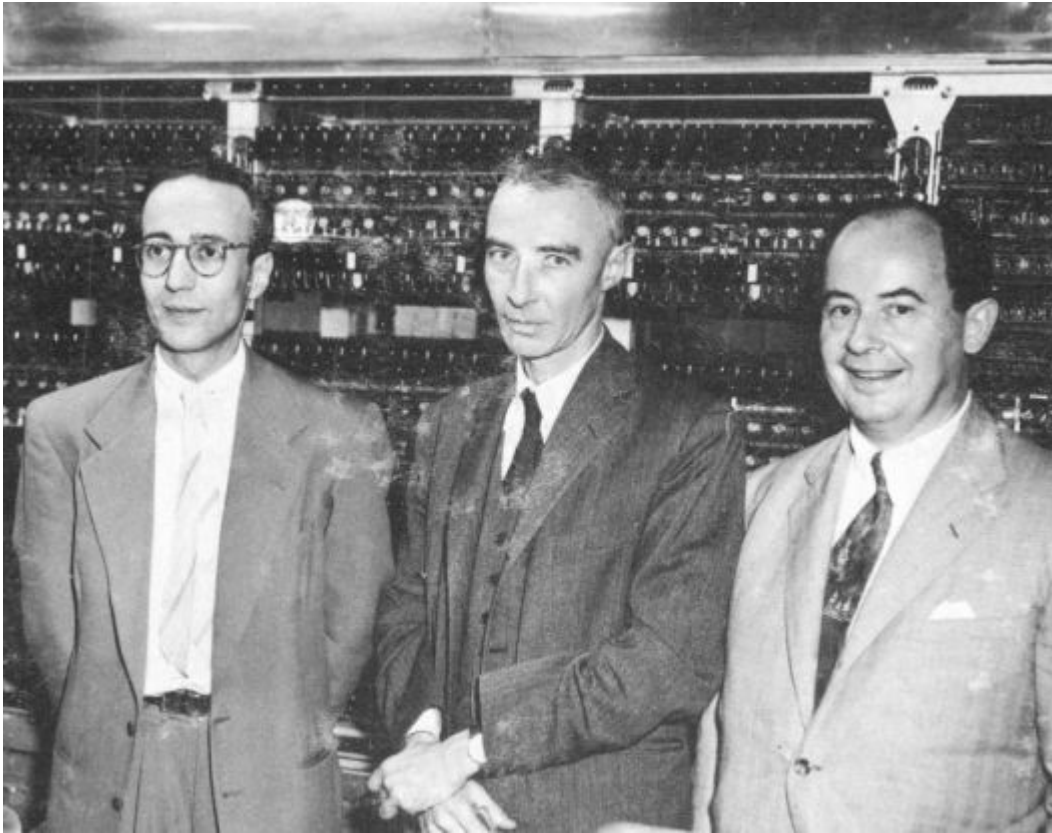


**Mauchly (A), Eckert (B) e Goldstine (C),  
Univ. of Pennsylvania – 1943-1945**

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# Dall'ENIAC all'EDVAC

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## First Draft of a Report on the EDVAC

John von Neumann

*Contract No. W-670-ORD-4926 between the United States Army Ordnance Department and the University of Pennsylvania.*

**Herman H. Goldstine, Robert Oppenheimer e John von Neumann**

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# Olivetti ELEA 9003

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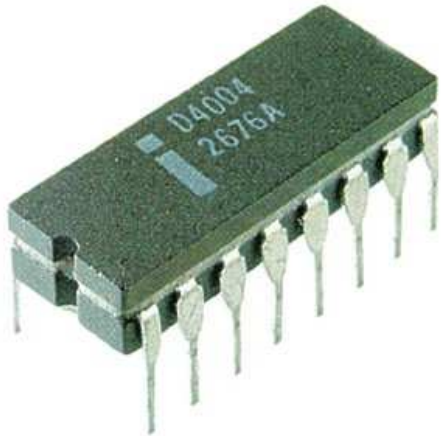


**Primo computer commerciale totalmente a transistor**

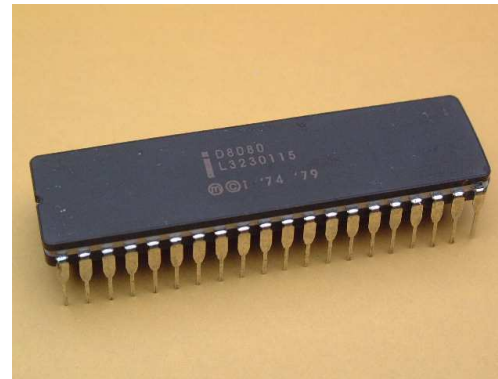
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# Avvento dei microprocessori

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**INTEL 4004 (1971) –  
2300 transistor**



**INTEL 8080 (1974) –  
4500 transistor**



**INTEL 8086 (1978) –  
29000 transistor**



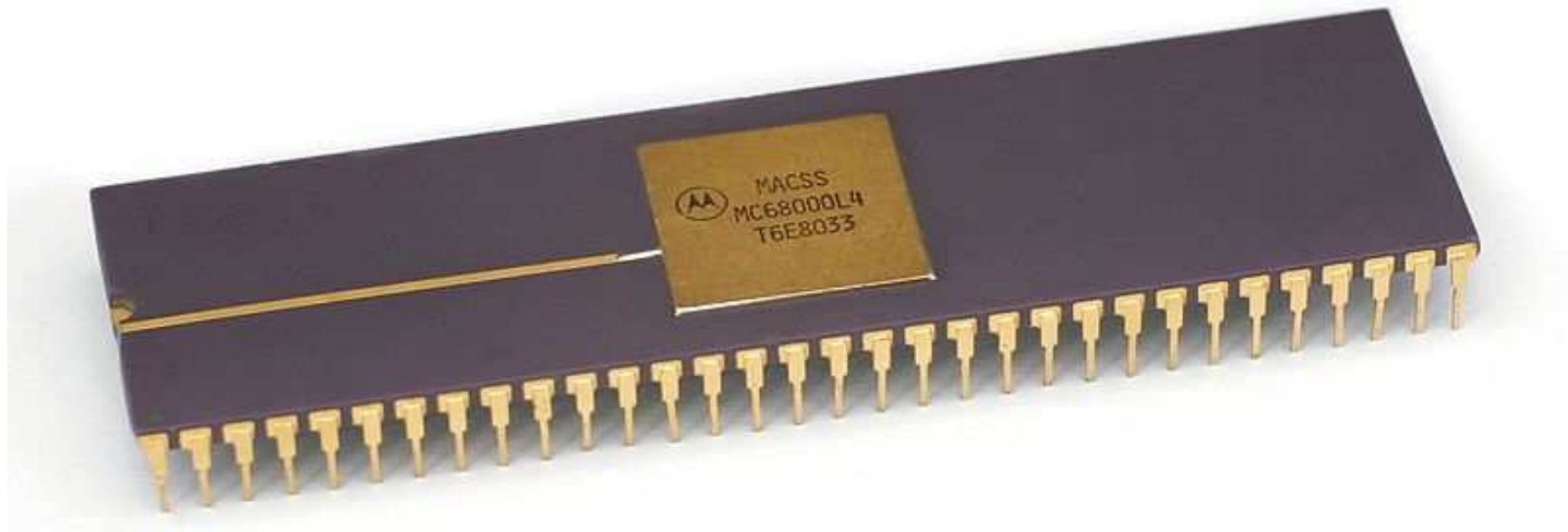
**INTEL 80386 (1985) – 275000 transistor**

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# Motorola MC68000

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# Microcomputer (1980-1986)

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# Personal Computer: PC IBM

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1981





# Sun SparcStation 20

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1997



# Palmaris, smartphone, ...

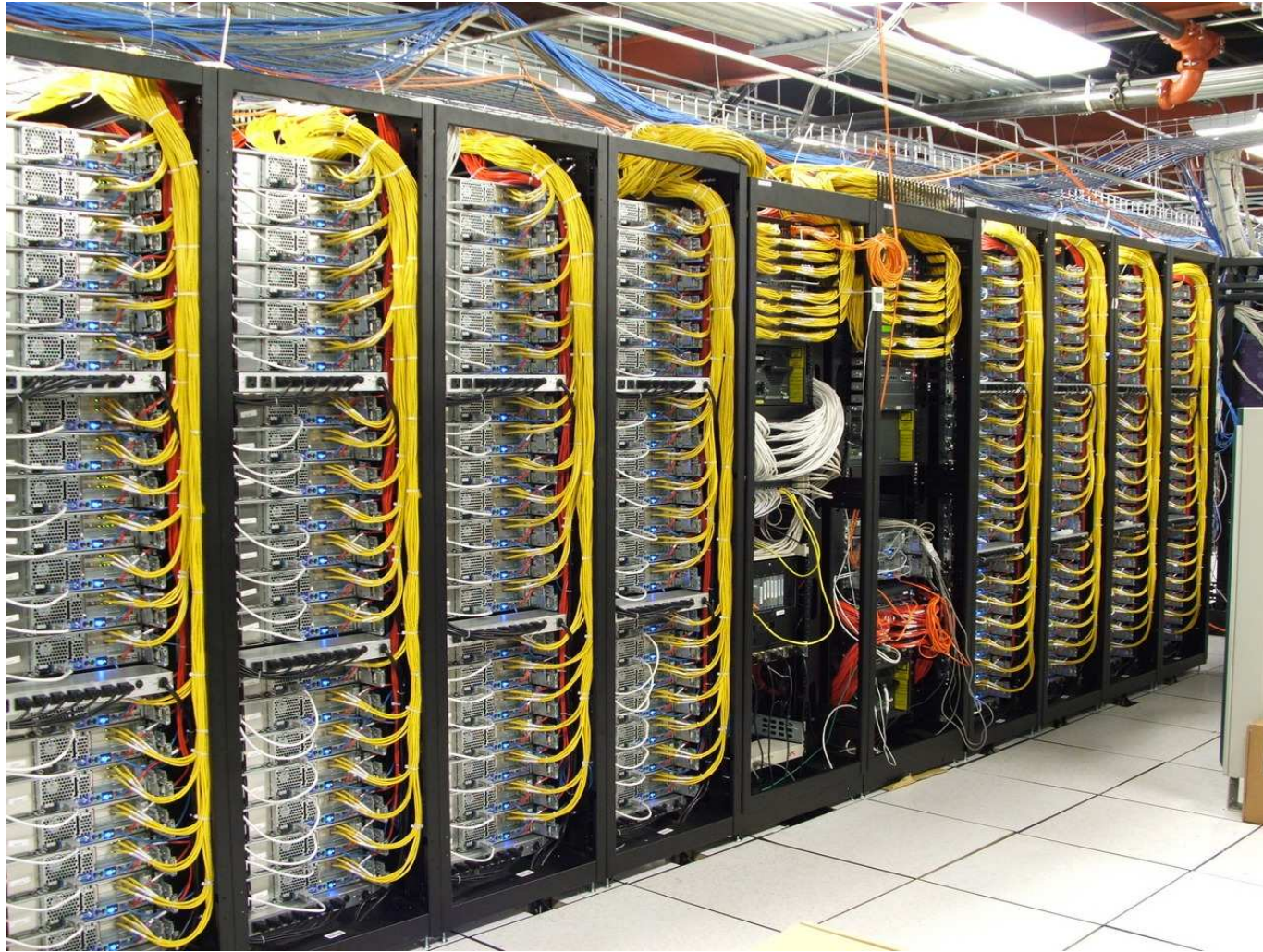
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# Cluster di computer

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# Sistemi embedded

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- Calcolatori special purpose per il controllo di apparati
    - Gli autoveicoli più moderni e sofisticati oggi possono montare anche 80 processori (ad es. per il controllo dell'ABS, dell'iniezione, ecc...)
  - Tipicamente controllati da s.o. con capacità real-time
  - Hardware-Software co-design
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