

Calcolatori personali: strumenti di produttività personale

Storia dell'Informatica
a.a. 2025/26



- L'informatica, personalmente
- Strumenti personali, Galileo in affari
- Regoli e calcolatrici cui affezionarsi
- Precursori, di nuovo
- Primi tentativi di pubblici altri

□ Hardware

- Sempre più portatili, sempre più propri
- Smartphone, tablet, con custodie e accessori
- Notebook, per chi lavora, sempre e ovunque :(
- Il desktop (tower): vecchi uffici o smanettoni

□ Software e servizi

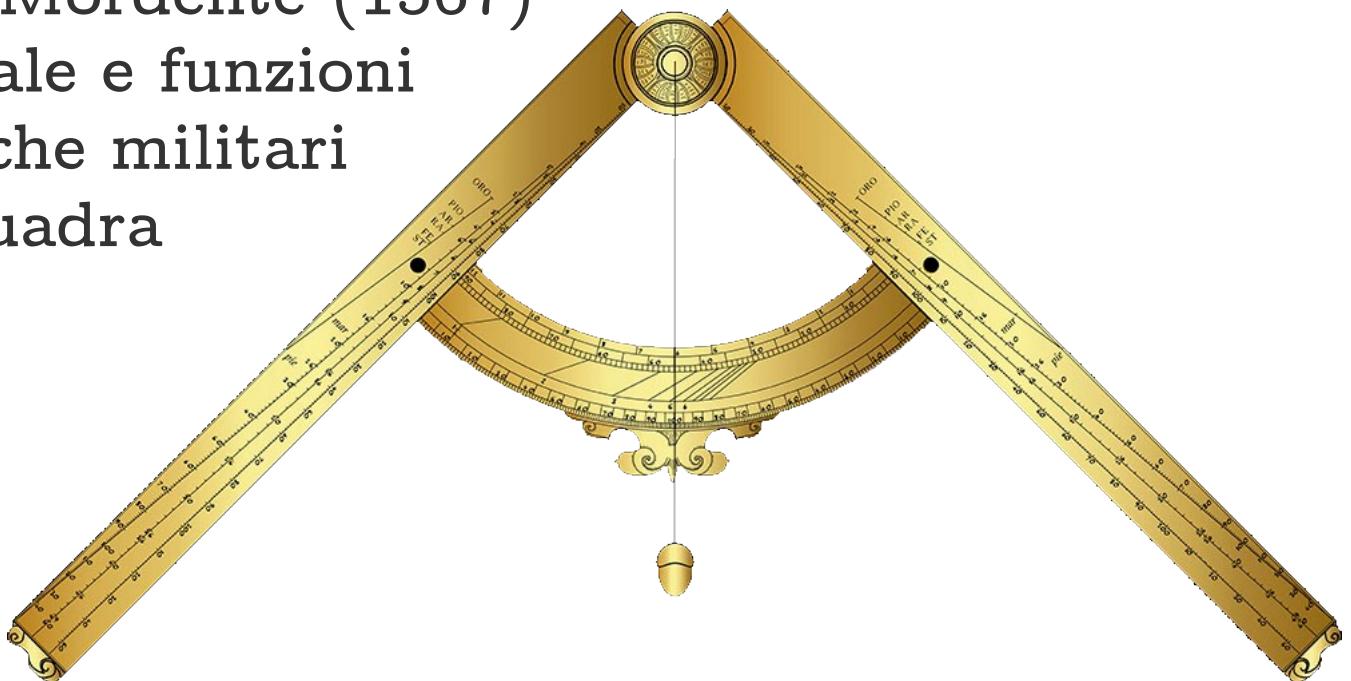
- Facebook, Twitter, Instagram... i selfie!
- Le *app*, come personal assistant
- Produttività personale, ieri suite da ufficio
- I videogiochi, almeno lì rimane la sfida tecnologica

□ Ma non è un'evoluzione dei grandi sistemi!

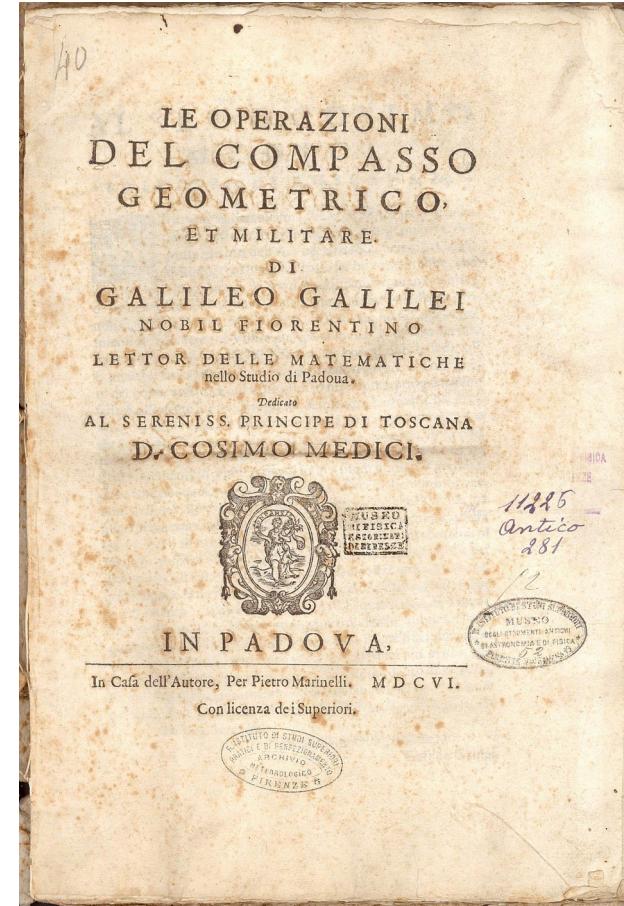


- Il coltellino svizzero del calcolo (1597)

- Compassi calcolatori già ben noti
- Compasso di Mordente (1567)
- Unisce più scale e funzioni
- Usi sia civili che militari
- Sestante e squadra
- Goniometro



- A Padova, 1592-1610
 - Dopo la morte del padre (1591)
 - Imprenditore per necessità
- La bottega
 - Con Marcantonio Mazzoleni
 - Costruzione su commissione
- Il manuale
 - Solo d'uso
 - Quasi inutile senza compasso
 - Dedicato a Cosimo Medici

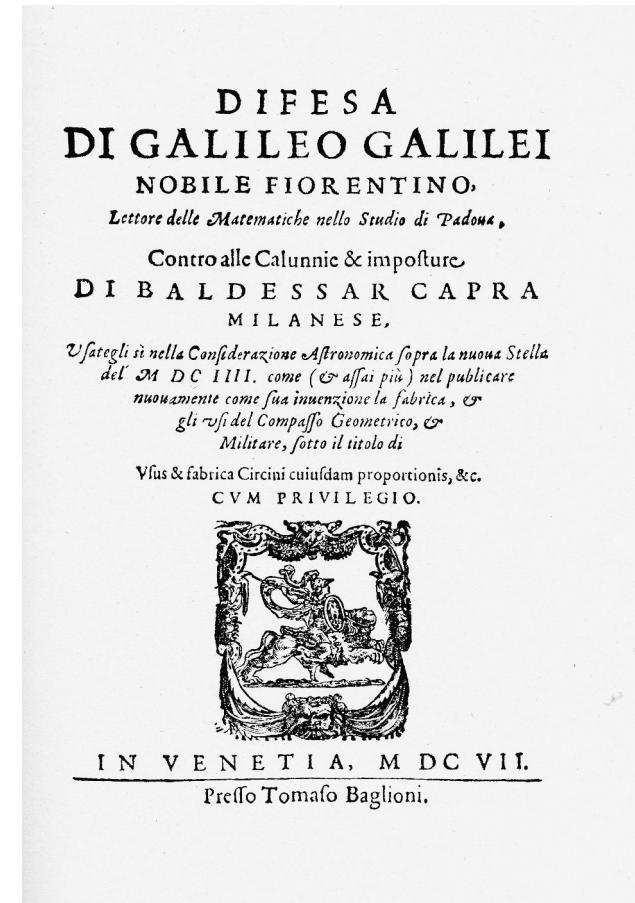


□ Baldassarre Capra

- Già in polemica con Galileo sulla “nova stella” di Keplero
- Plagiò il manuale traducendolo in latino

□ La risposta di Galileo

- Capra è sfidato in cimento
- Di fronte ai Riformatori dello Studio di Padova



... un tavolino da potervi posar sopra un libro, un compasso, un poco di carta, con penna ed inchiostro... finalmente, instandolo io e sfuggendo ogn'altro diverticolo, al preparato tavolino lo condussi...

... a questo si trovò egli più che mai inviluppato: e finalmente, per distrigarlo di là ond'ei mai non si averebbe sviluppato, bisognò che io gli dicesse come l'error suo era...

... quelli Illustrissimi ed Eccellentissimi Signori, chiarissimi ormai della verità del fatto, forse compassionando al tormento nel quale io ritenevo il malarrivato Capra, fecero cenno che tanto bastava...
... domandai ancora al Capra, chiesta buona licenza a quei Signori, quanto fusser grandi gli angoli di un triangolo...

- I regoli, da Napier in poi

- *Mirifici Logarithmorum Canonis Descriptio*, 1614
- 1620ca, Edmund Gunter, Oxford, protoregolo circolare
- 1632, William Oughtred, Cambridge, doppio Gunter
- 1859, Amédée Mannheim, per l'artiglieria francese

- Forme, misure, materiali, specializzazioni

- Lineari, circolari, cilindrici
- Da scrivania, ma soprattutto da taschino
- Legno, legno e celluloide, bambù...
- Generici, ingegneria civile, astronomia, aeronautica...



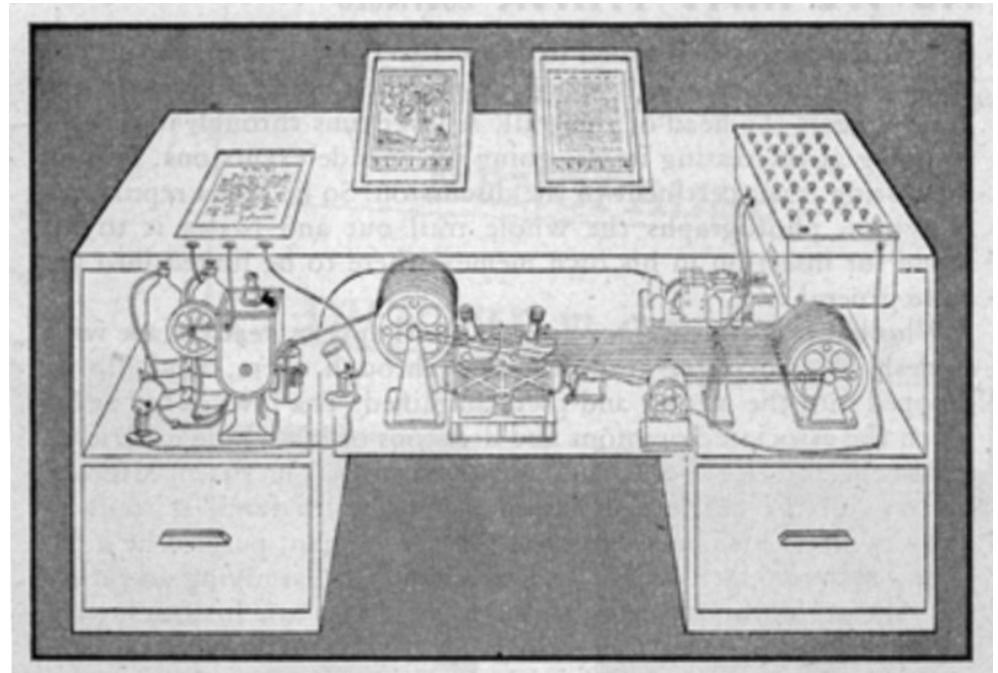
... Well let's see now ah... aa... nn... Radioactive halflife of uh... hmm...
I would think that uh... possibly uh... one hundred years...

- Una lunga stagione
 - Dalla metà del '800 agli anni '70
 - Produzioni da migliaia a milioni di unità
- Sempre professionali
 - Spesso portatili
 - Alcune si aprono e si chiudono
- Personaliali
 - Simili, ma differenti
 - Richiedono impegno, dedizione, anche abilità
 - Ci si affeziona, si difendono



- Dalla calcolatrice al calcolatore
 - Oltre alle operazioni, gestire il procedimento
 - La soluzione meccanica era inadeguata
 - Babbage? forse ce lo dirà Plan 28
 - Zuse? qualcosa con la Z1, ma passò subito ai relé
- La soluzione elettronica
 - Risolve memoria, operazioni, istruzioni
 - È ugualmente veloce su tutti e tre i fronti
 - Non ha parti in movimento
 - Può affrontare calcoli lunghi, e in tempi brevi
- Ma, inizialmente, è ingombrante e costosa

- 1945, “As we may think”, *The Atlantic Monthly*
- Vannevar Bush
 - Ingegnere,
gestore di progetti
 - Analizzatori
differenziali
 - Spolette con
radar di prossimità
 - Manhattan Project



- Irido meccanico/elettronico
- Non *stored program*
 - tamburo magnetico per 100 registri
 - schede elettromeccaniche per 128 passi di programma
 - controllo elettronico valvole e diodi
 - unità aritmetico-logica meccanica



□ Elettronico

- memoria magnetostrettiva 2048 / 4096 parole
- decimale,
4/24 cifre + segno
- 7 registri dedicati,
con display
- I/O nastro perforato
e macchina per scrivere
alfanumerica



sulla scrivania, falsi amici, 1963

□ ANNOUNCING

The new Friden 130 Electronic Calculator



(1962) 1964, Mathatron

William Kahn
Roy Reach
David Shapiro

**how to get
a quick tan**

Or arctan for that matter. Trigonometric functions are solved in a few seconds on Mathatron, the \$5,000 digital computer.

Mathatron understands algebra — your language. Just tap in the expression the way you would write it. Use power-of-10 exponents, parentheses, square roots, decimal points. Answers from the tape printer are in decimal, with the point in the right place.

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Over 80% of Mathatron owners have access to a big computer, but they prefer quick answers. Write us for the whole story.

mathatron: Program memory, 24 to 480 steps • Addressable storage, 4 to 88 registers • 9 significant digits, exponent, and sign • Number range $\pm 10^{-12}$ to 10^{38} • Speed 100 accumulations per second • Optional prewired programs for special applications.

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÷ and conquer

Vanquish your problems as they come, with Mathatron, the \$5,000 digital computer. No need to go to number-systems school or build a FORTRAN empire. Just express yourself in algebra on the Mathatron keyboard — use power-of-10 exponents, parentheses, square roots and decimal points.

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mathatron: Program memory (core), 24 to 480 steps • Addressable storage, 4 to 88 registers • 9 significant digits, exponent, and sign • Number range $\pm 10^{-12}$ to 10^{38} • Speed 100 accumulations per second • Optional prewired programs for special applications.

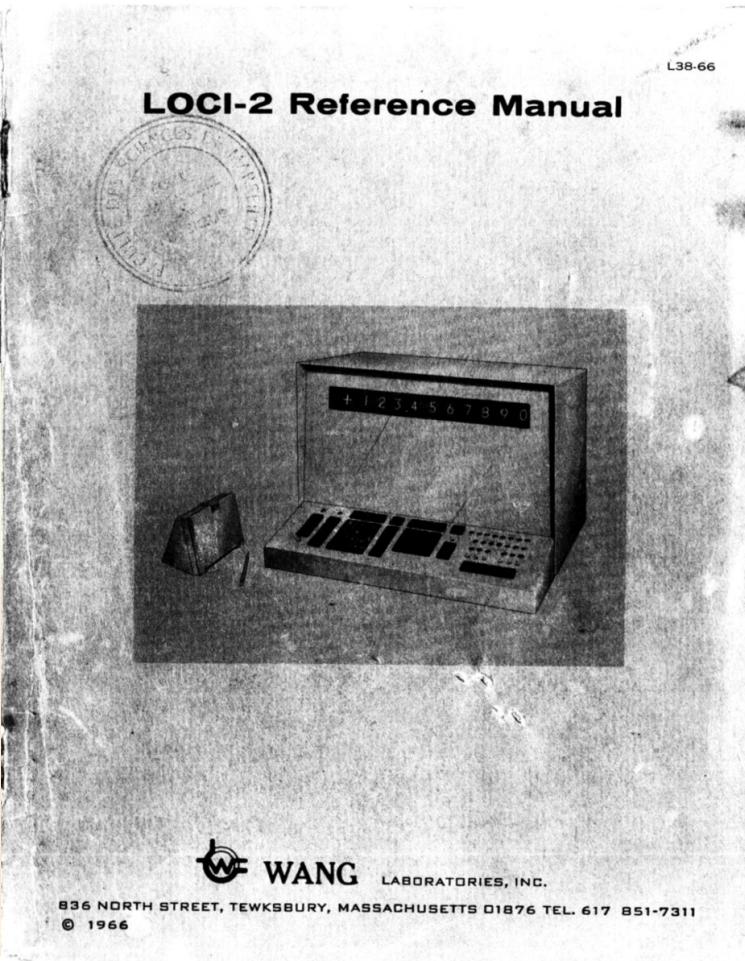
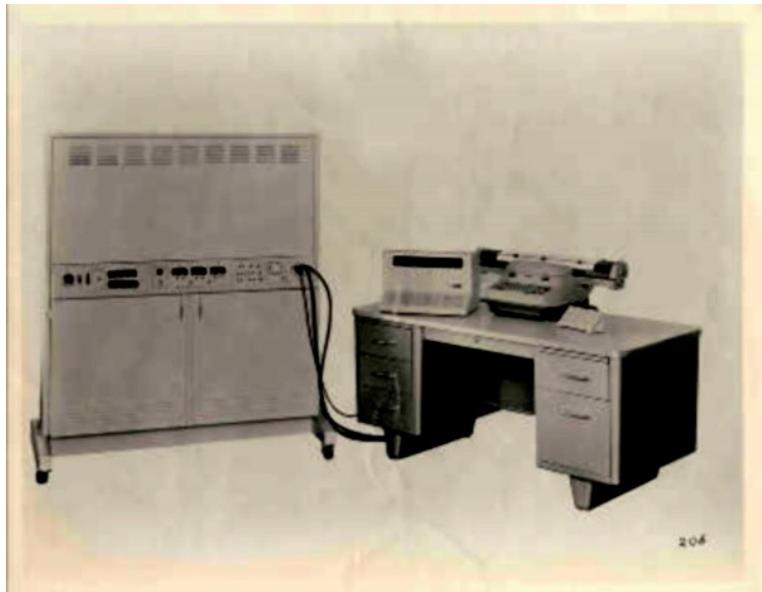
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(1964) 1965, Wang LOCI-2

An Wang



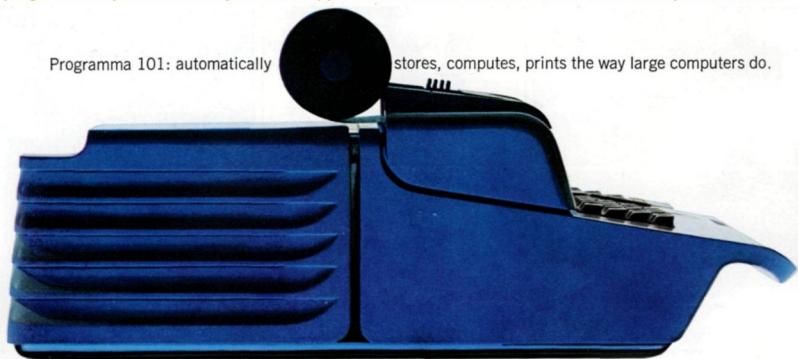
(1964) 1965/66, Programma 101

Pier Giorgio Perotto
Giovanni De Sandre
Gastone Garzera
Franco Brettì
Edoardo Ecclesia
Mario Bellini (design)

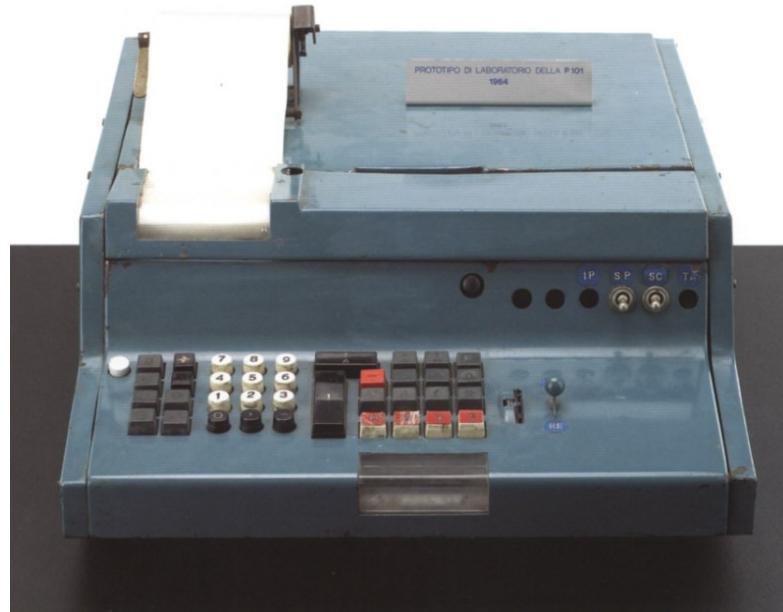
Olivetti
Underwood
innovates:
the world's
first desk-top
computer,
\$3200

This is the world premiere of the Programma 101, the computer that brings a new dimension to business. Now for less than one month's rental of a large computer, businessmen, scientists and technicians can own the Programma 101 outright. Not much bigger than a typewriter, it sits on your desk. Like the large computers, it thinks in milliseconds, makes logical decisions. You can program it to compute logarithms, even print out complex mortgage plans. Automatic printout provides a permanent record. Programs can be stored off the machine on magnetic cards, reentered in seconds. And Olivetti Underwood's program library offers virtually limitless applications. Ask us for a demonstration. Total price, \$3200.

Programma 101: automatically stores, computes, prints the way large computers do.



- Dopo la cessione della Div. Elettronica
 - Il gruppo di Perotto trova qualcosa da fare
 - Roberto Olivetti sostiene il progetto
 - Capellaro dà una mano



□ Lo stand Olivetti

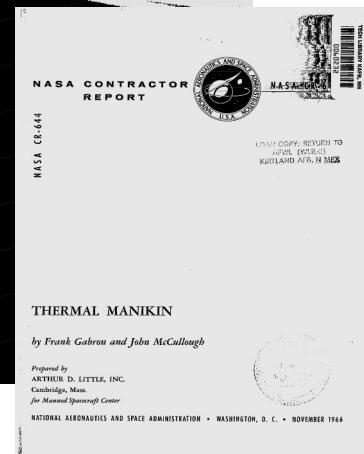
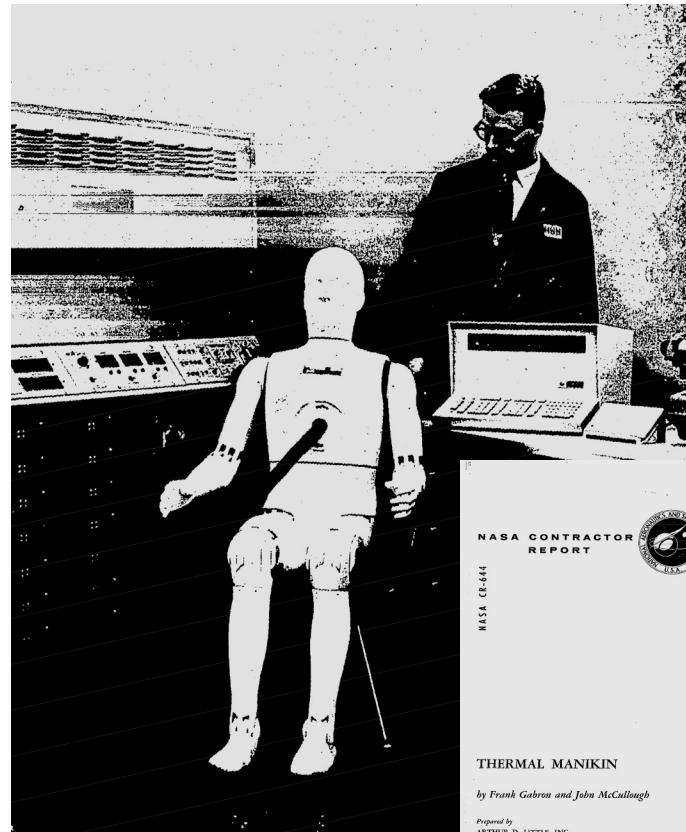
- Dedicato al lancio della Logos 27, una supermeccanica
- La Programma 101 ha però il suo angolino

□ Presentazioni successive

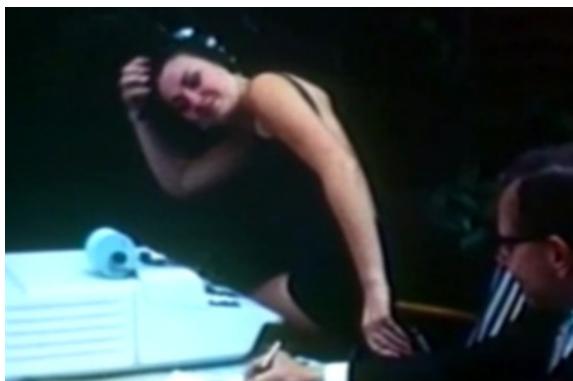
- 1965.12 Mosca
- 1966.04 Milano



miti costruiti e veri contractor



la notevole campagna



Massimo Rinaldi



Tom Osborne

Powerful Computing Genie: \$4900

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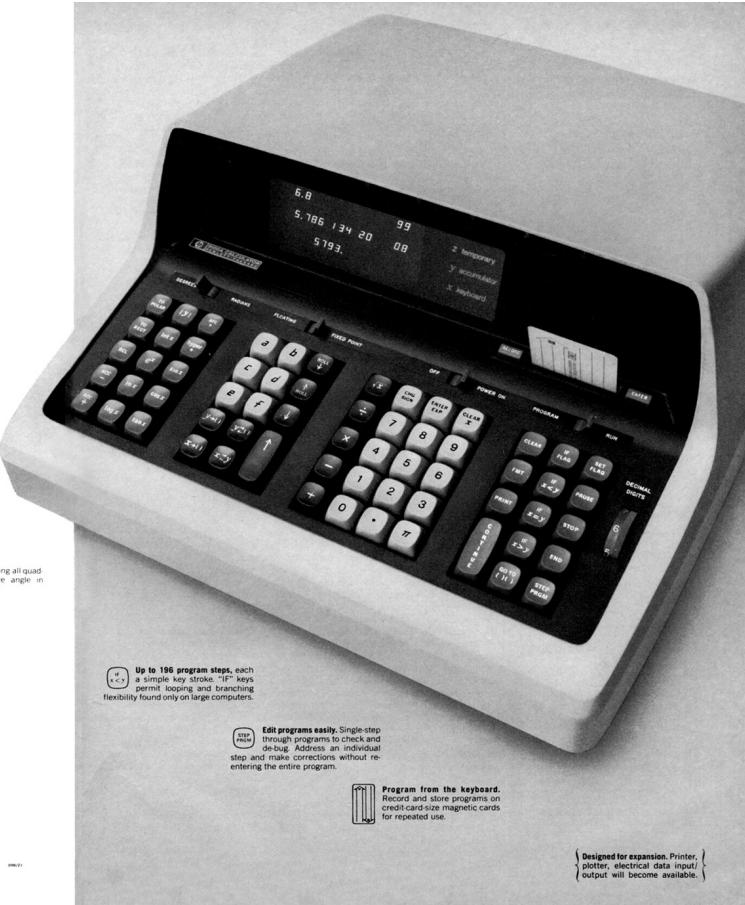
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Trig functions covering all quadrants, and any size angle in degrees or radians.



Designed for expansion. Printer, plotter, electrical data input/output will become available.



1967, Paperclip Computer

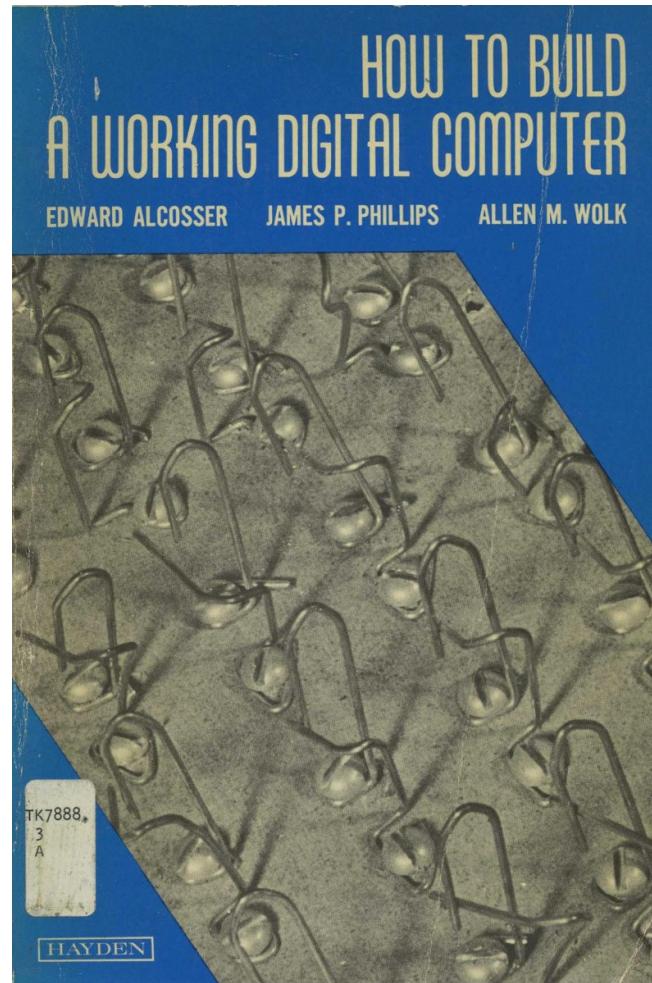
Calcolatori didattici,
o per hobby,
per tutti (o quasi)

Altri:

1952 Simon
Edmund C. Berkeley & Ass.

1965 Little Man Computer
Stuart Madnick
& John Donovan

1968 MIX
Donald Knuth



Gardner Hendrie
Neiman & Marcus



If she can only cook as well as Honeywell can compute.

Her souffles are supreme, her meal planning a challenge? She's what the Honeywell people had in mind when they devised our Kitchen Computer. She'll learn to program it with a cross-reference to her favorite recipes by N-M's own Helen Corbitt. Then by simply pushing a few buttons obtain a complete menu organized around the entrée.

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\$48 Fed with Corbitt data: the original Helen Corbitt cookbook with over 1,000 recipes \$5.00 (.75) \$40 Her Potluck, 375 of our famed Zodiac restaurant's best kept secret recipes \$3.95 (.75) Epicure \$40 Her tabard apron, one-size, ours alone by Garden House in multi-pastel provincial cotton \$28.00 (.90) Trophy Room



- R.A. Allan, “A History Of The Personal Computer - The People and the Technology”, Allan Publishing Company, 2001.
- G.A. Cignoni, “Dall’Aritmometro al PC”, in Quaderni della Fondazione Galilei, n. 2, 2013