

Computer Science Fiction

- ❖ marco.mangan@pucrs.br
- ❖ Semana Acadêmica 2024/II





<https://github.com/masmangan/cscifi>

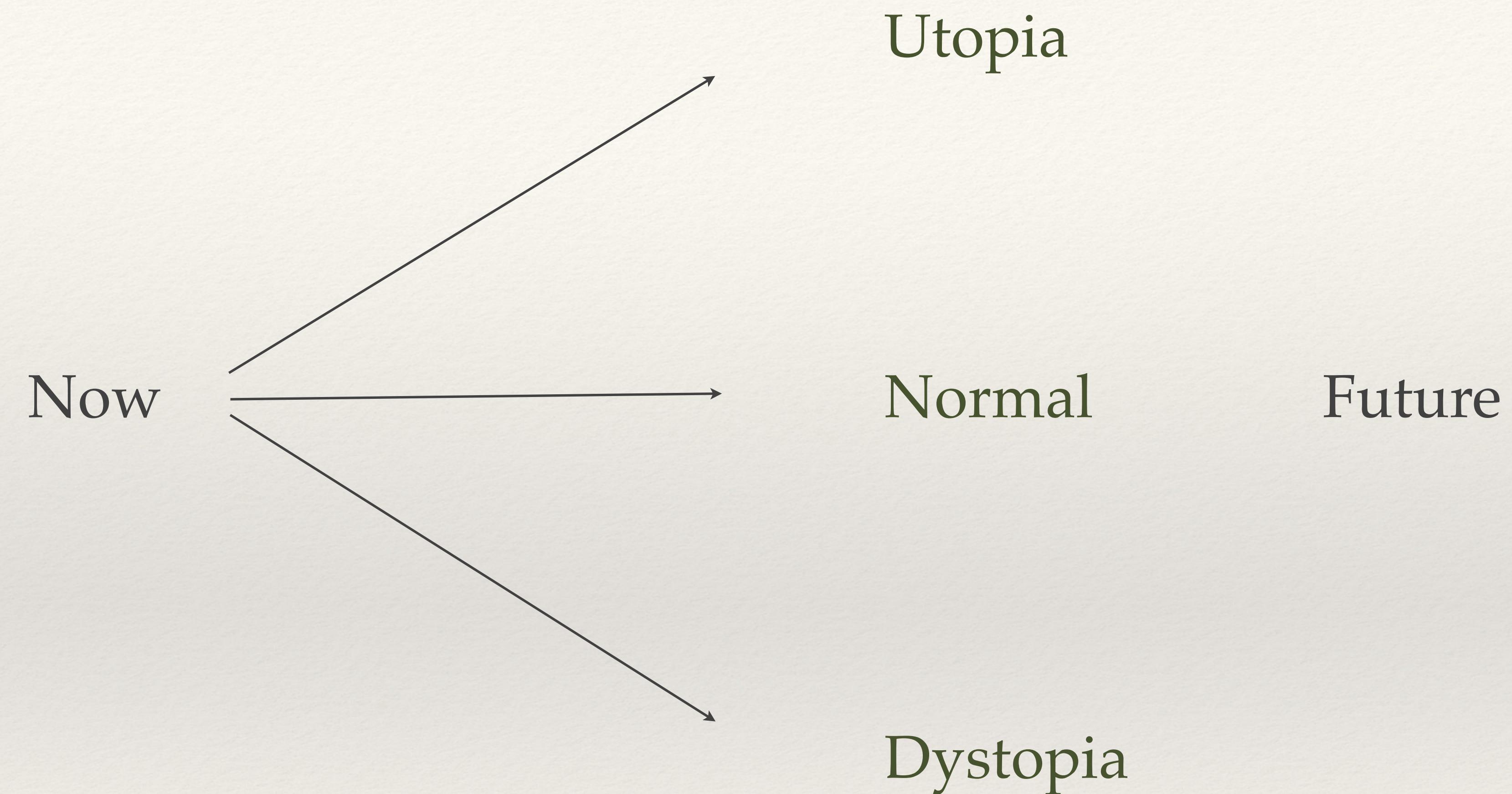
Computer Science

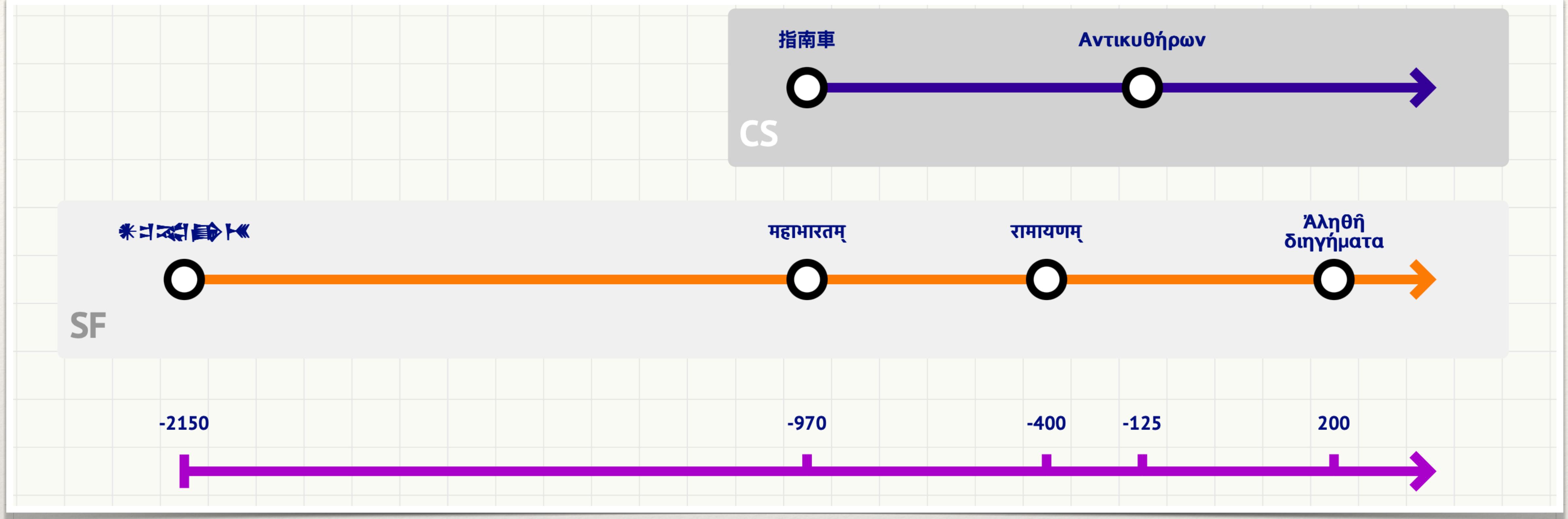
- ❖ The study of computers, their underlying principles and use.
(Oxford Dictionary of Computing)
- ❖ The branch of science that deals with the theory of computation or the design of computers.
(Merriam-Webster.com)

Science Fiction

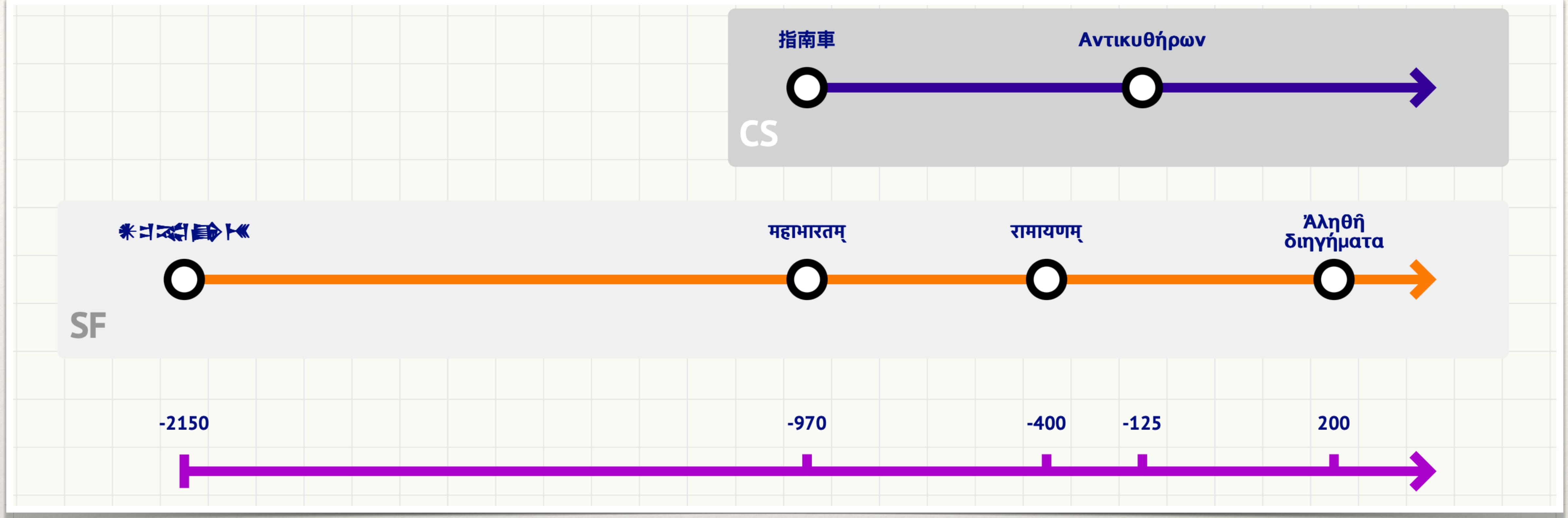
- ❖ Fiction dealing principally with the impact of actual or imagined science on society or individuals or having a scientific factor as an essential orienting component.

(Merriam-Webster.com)





First works



Find twelve concepts!

Shared Concepts

A word cloud visualization of shared concepts. The words are arranged in a cluster, with larger words representing more frequent concepts. Smaller words are placed near their corresponding larger words, often sharing the same color or font style. The colors used include maroon, orange, yellow, green, and blue.

computer post-human
cybernetic

cyborg technological singularity

android

robot

artificial intelligence

matrix neuro-piracy

artificial reincarnation

holographic memory

simulated reality

time traveling

spaceship

teleportation nano-robots

Computer Scientists

Church 1903-1995

The calculi of lambda-conversion 1941



- ❖ Underlying the formal calculi which we shall develop is the concept of a function as it appears in various branches of mathematics, either under that name or under one of the synonymous names, “operation” or “transformation.”

Church (1941) The calculi of lambda-conversion

Turing 1912-1954

On computable numbers, with an
application to the
Entscheidungsproblem 1936
Computing machinery and
intelligence 1950



- ❖ The “computable” numbers may be described briefly as the real numbers whose expressions as a decimal are calculable by finite means.

Turing (1936) On computable numbers, with an application to the
Entscheidungsproblem

- ❖ I propose to consider the question, 'Can machines think?' This should begin with definitions of the meaning of the terms 'machine' and 'think'.

Turing (1950) Computing machinery and intelligence

von Neumann 1903 - 1957

First Draft of a Report on the EDVAC
1945

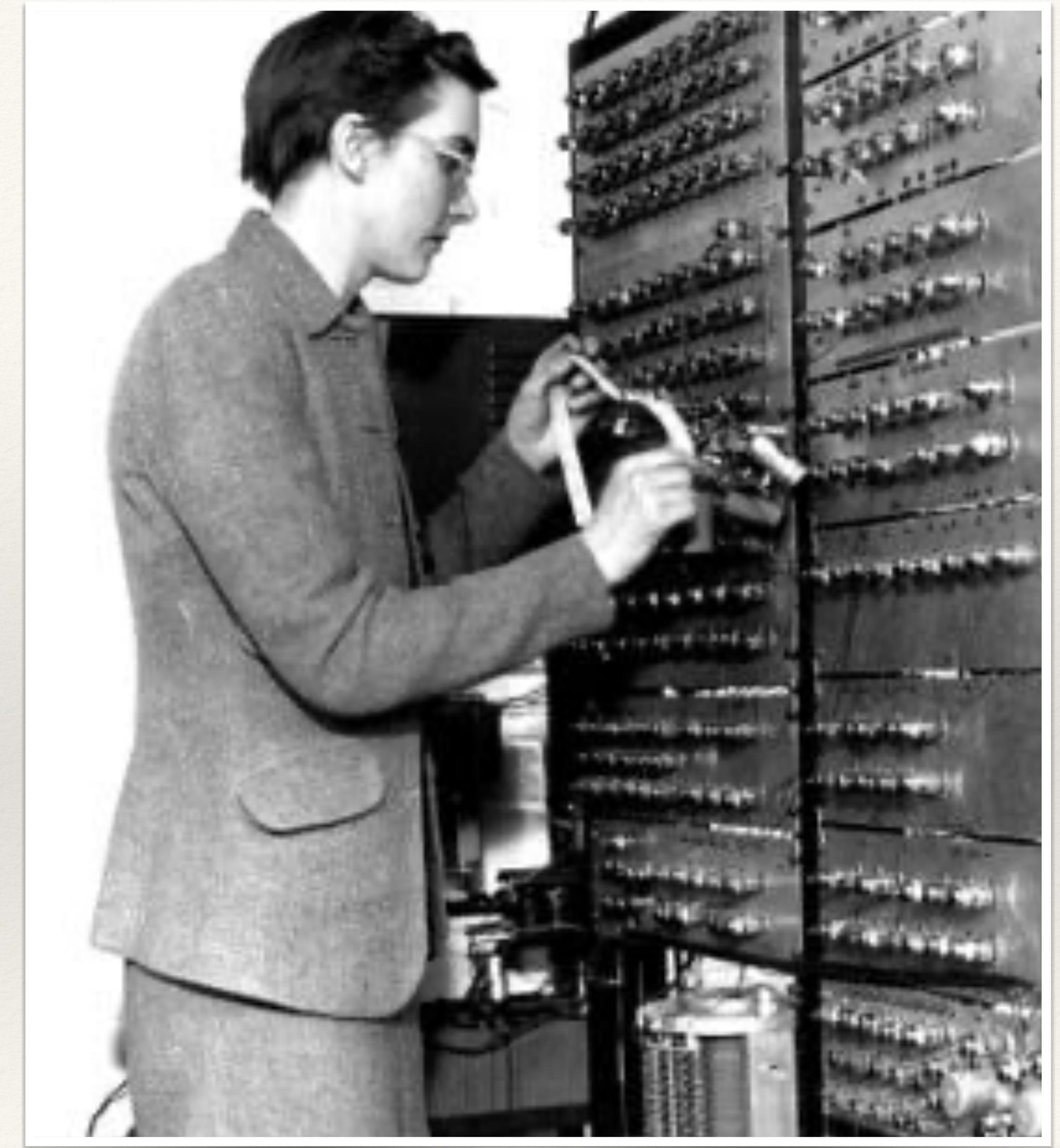


- ❖ The considerations which follow deal with the structure of a *very high speed automatic digital computing system*, and in particular with its *logical control*.

von Neumann (1945) First Draft of a Report on the EDVAC

Booth 1922-2022

Coding for A.R.C. 1947



- ❖ The advantage of this arrangement is obvious, we shall be able to transfer any problem which has been coded for A.R.C, directly to the electronic machine when this becomes available.

Andrew e Kathleen (1947) Coding for A.R.C.

Backus 1924-2007

The syntax and semantics of the proposed international algebraic language of the Zurich ACM-GAMM Conference 1959
Can programming be liberated from the von Neumann style? 1977



- ❖ This paper gives a tutorial summary of the syntax and interpretation rules of the proposed international algebraic language put forward by the Zurich ACM-GAMM Conference, followed by a formal, complete presentation of the same information.

Backus (1959) The syntax and semantics of the proposed international algebraic language of the Zurich ACM-GAMM Conference

- ❖ Conventional programming languages are growing ever more enormous, but not stronger.

Backus (1977) Can programming be liberated from the von Neumann style?

Some more Computer Science Writers

- ❖ Shannon, Hopper, McCarthy, Busch, Samuel, Engelbart, Wilkes, Simon, Zuse.

Science Fiction Writers

Čapek 1890 - 1938

Rossumovi univerzální roboti 1920

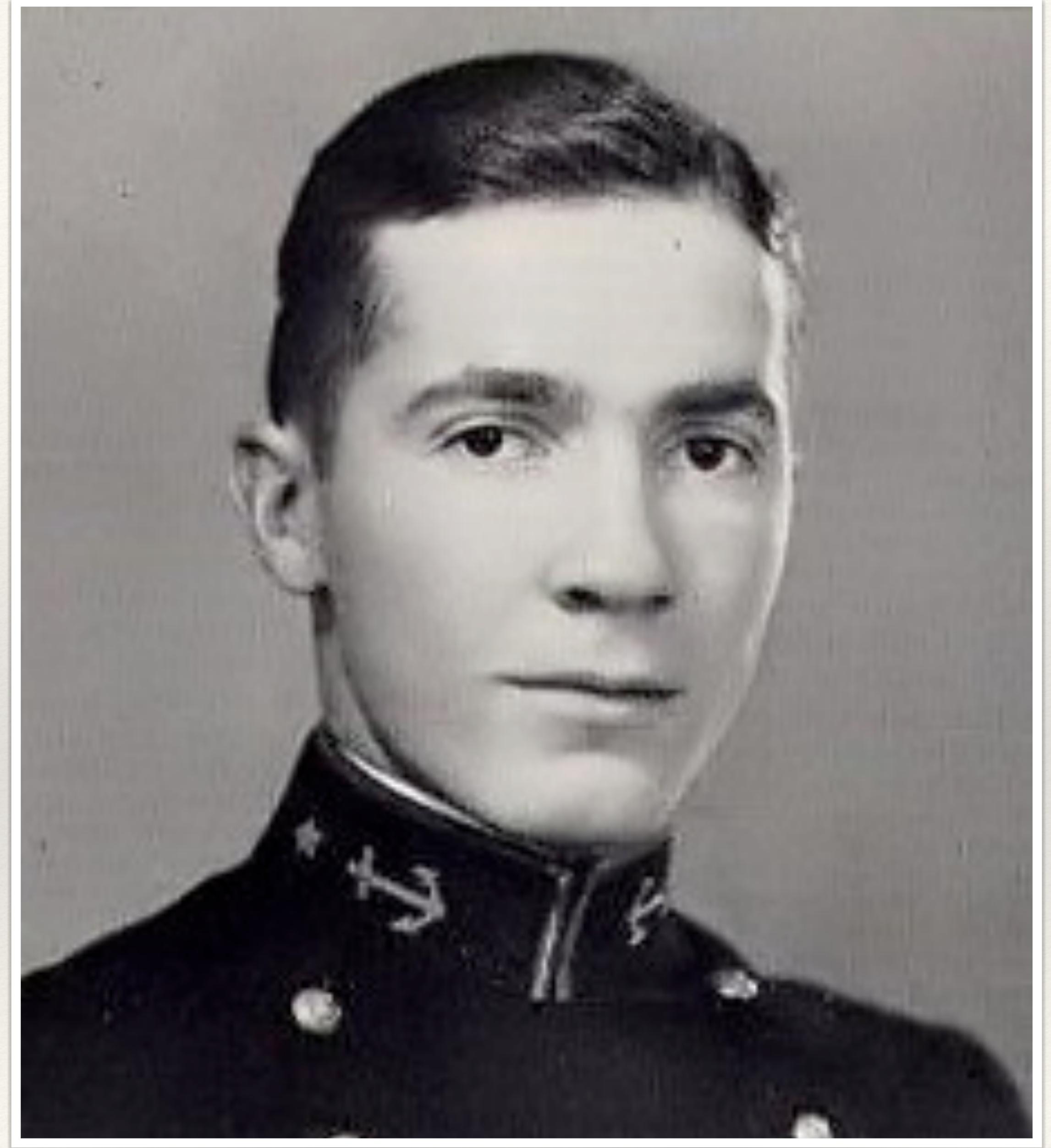


Heinlein 1907-1988

All You Zombies 1958

Starship Troopers 1959

Stranger in a Strange Land 1961



Moore 1911 - 1987

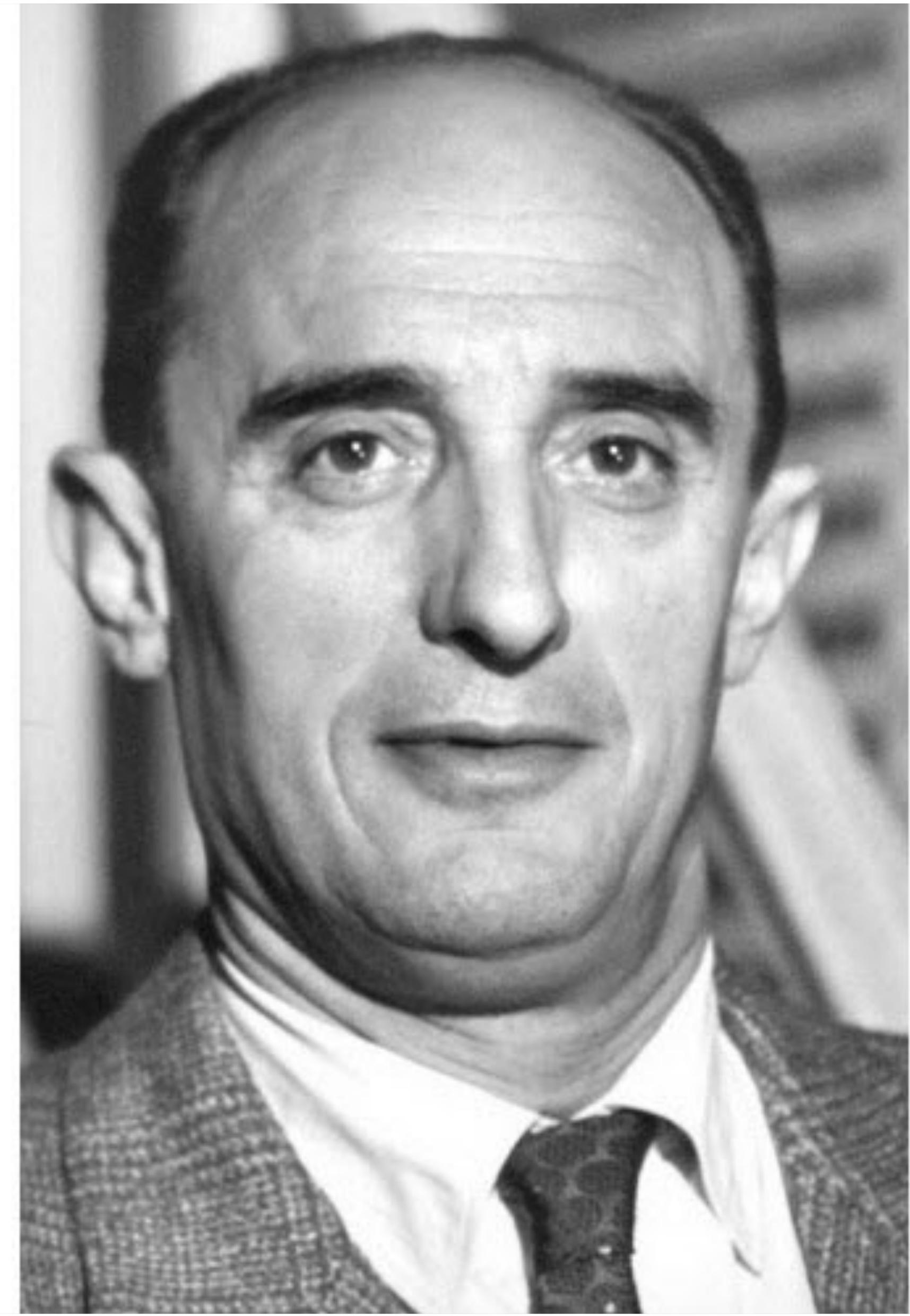
Shambleau 1933

No Woman Born 1944



Boulle 1912-1994

La Planète des Singes 1963



Clarke 1917- 2008

The Sentinel 1948

2001: A Space Odyssey 1964



Bradbury 1920-2012

The Martian Chronicles 1950
Fahrenheit 451 1953



Asimov 1920-1992

Foundation 1951

Tomorrow
10h30
This same room!



Lem 1921-2006

Solaris 1961

Pamiętnik znaleziony w wannie 1961

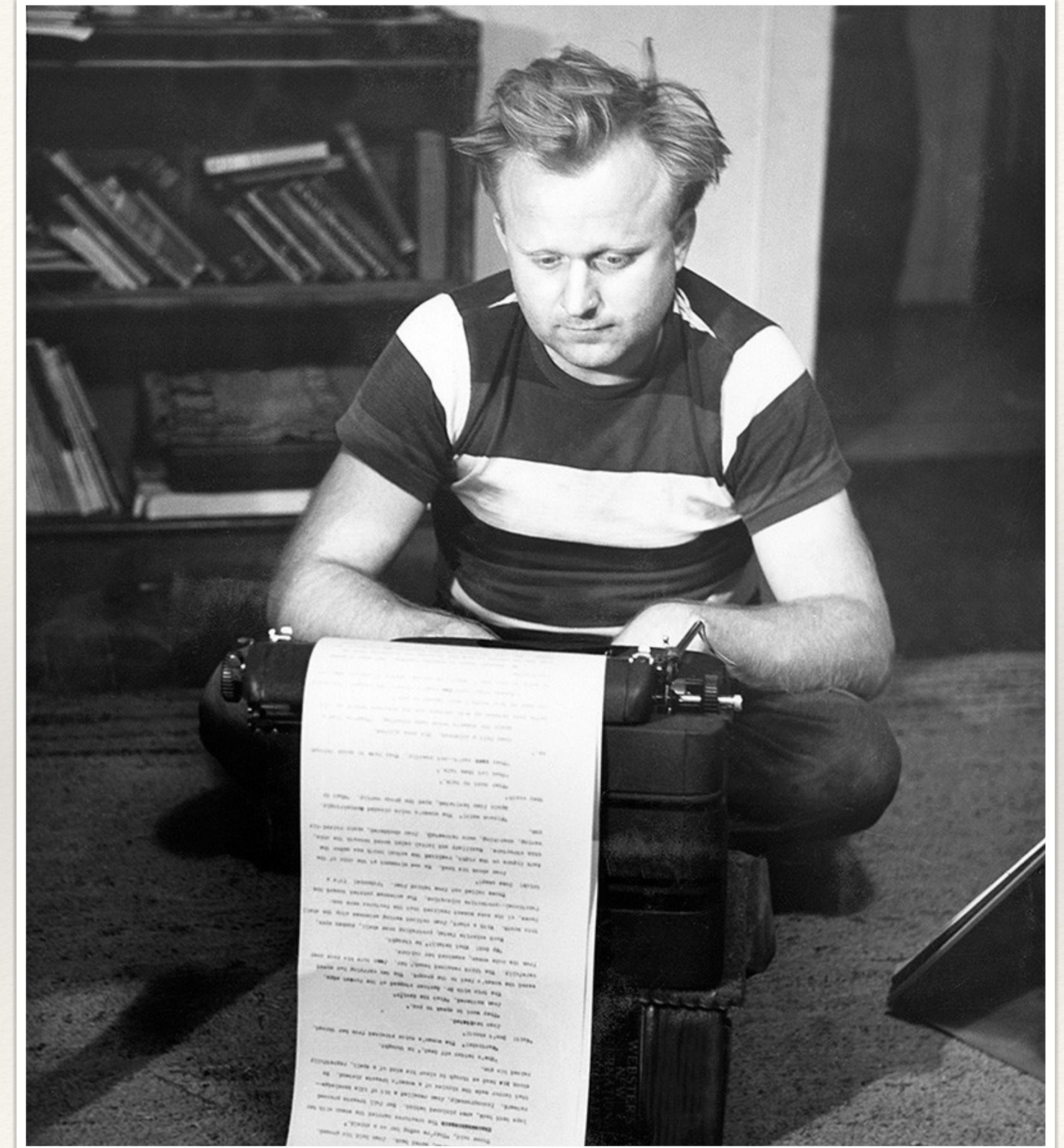


Herbert 1920-1986

Dune 1965

Destination Void 1966

The Dosadi Experiment 1977



Dick 1928-1982

The Minority Report 1956
We Can Remember It for You
Wholesale 1966
Do Androids Dream of Electric Sheep?
1968



Le Guin 1937-2011

The Left Hand of Darkness 1969
The Dispossessed 1974



Russ 1937-2011

And Chaos Died 1970
The Female Man 1975



Atwood 1939-

The Handmaid's Tale 1985

The Testaments 2019



Gibson 1948-

Burning Chrome 1982

Neuromancer 1984

The Difference Engine 1990



Some Brazilian Science Fiction

- ❖ Joaquim Manuel de Macedo 1820-1882, "O Fim do Mundo" (1857)
- ❖ Emília Freitas 1855-1908, Rainha do Ignoto (1889)
- ❖ Monteiro Lobato 1882-1948, O Presidente Negro (1926)
- ❖ Adalzira Bittencourt, 1904-1976, Sua Excia. A Presidente da República (1929)
- ❖ Giba Assis Brazil 1957-, Ana Luisa Azevedo 1959-, Jorge Furtado 1959-, Paulo Perdigão 1939-2006, Barbosa (1988)

Some More Science Fiction Writers

- ❖ Atwood, Anderson, Barjavel, Bogdanov, Burroughs, Crichton, Huxley, Kipling, Le Guin, Lovecraft, Lukyanenco, Machado de Assis, Nimoy, Orwell, Poe, Pohl, Rand, Shatner, Sheer & Dalton, Shelley, Stapledon, Stephenson, Tepper, Verne, Vonnegut, Yaco, Weir, Wells, Zamyatin...

Short Stories

- ❖ Asimov, Little Lost Robot (1947)
- ❖ Clarke, The Sentinel (1948)
- ❖ Clarke, The Nine Billion Names of God (1953)
- ❖ Yaco, No Moving Parts (1960)

Free books and audiobooks

- ❖ Gutenberg
 - ❖ <https://www.gutenberg.org/ebooks/62>
 - ❖ <https://www.gutenberg.org/ebooks/68283>
- ❖ LibriVox
 - ❖ <https://librivox.bookdesign.biz/book/164426>



**"A Few Years Ago,
the Idea of a
Computer You Could
Put in Your Pocket
Was Just
Science Fiction."**

—Isaac Asimov
Renowned Science and
Science-Fiction Author



**Today, Just *\$169.95 Buys a Radio Shack TRS-80®
Pocket Computer—And That's a Fact!**

Back when computers filled entire rooms, Isaac Asimov was writing about computers you could hold in your hand. "Radio Shack's TRS-80 Pocket Computer turned my dreams into reality. Now I can take the power of a true computer with me wherever I go," says Asimov.

The TRS-80 Pocket Computer is programmable in BASIC. Isaac, however, would rather write novels than programs. "If you're like me, you'll want to get a low cost interface that lets you use Radio Shack's ready-to-run programs." There are programs for engineering, finances, statistics—even real estate and aviation.

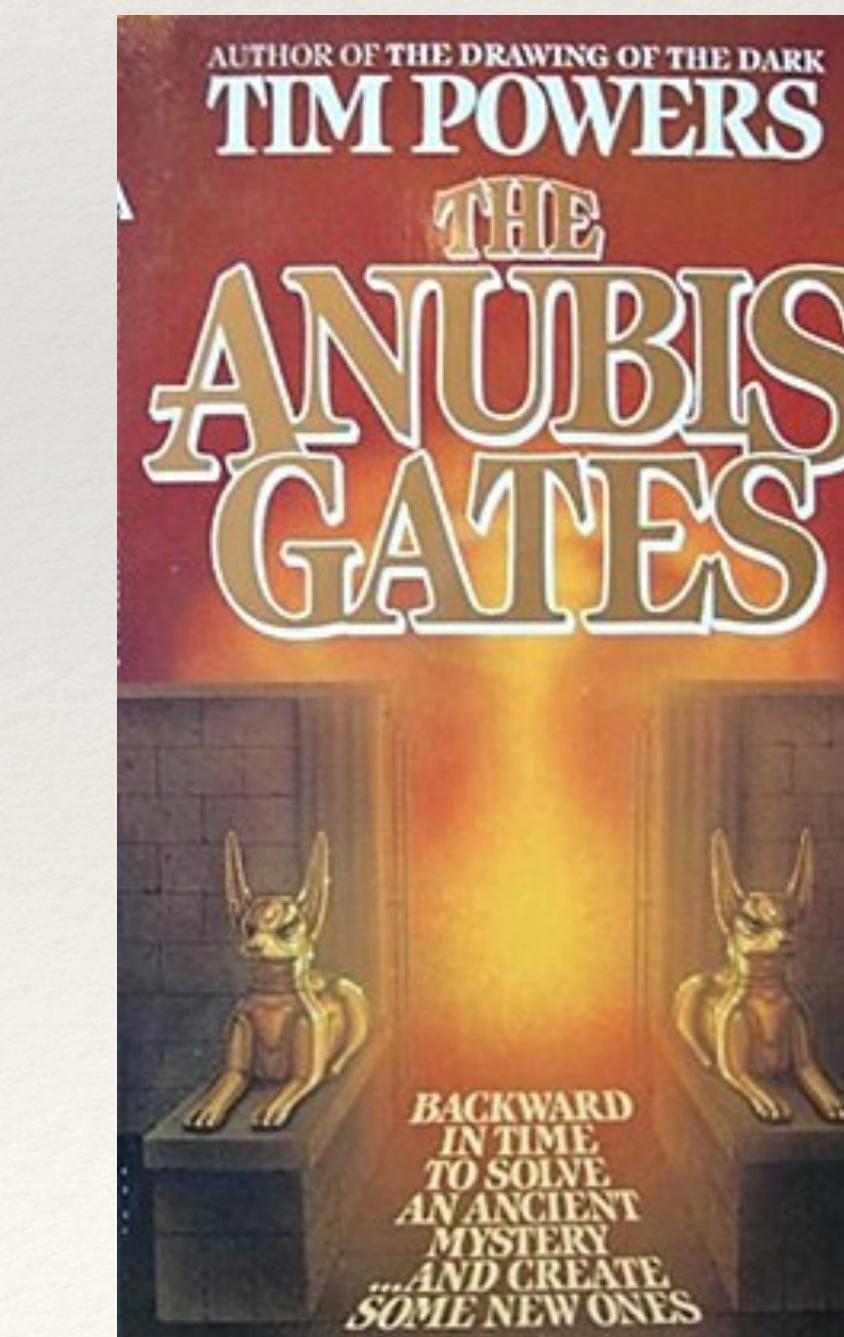
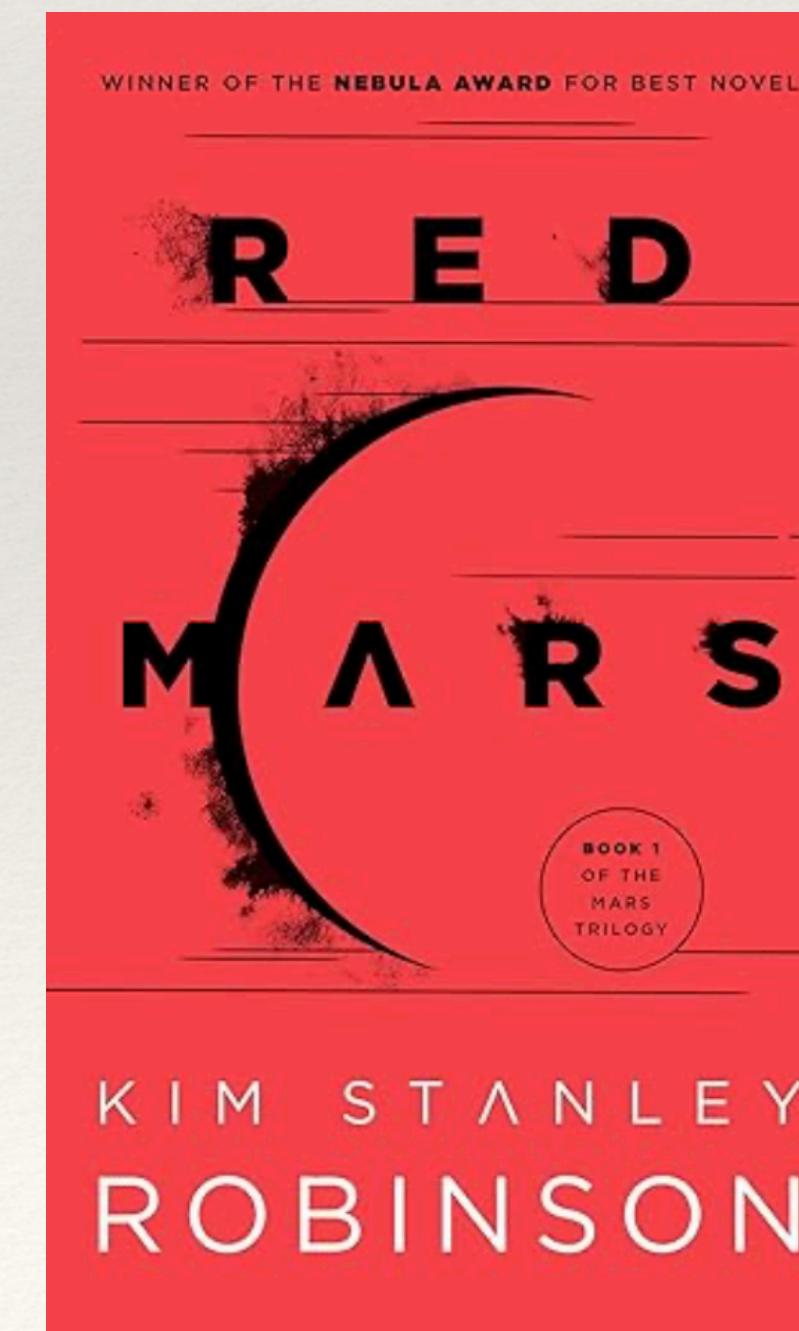
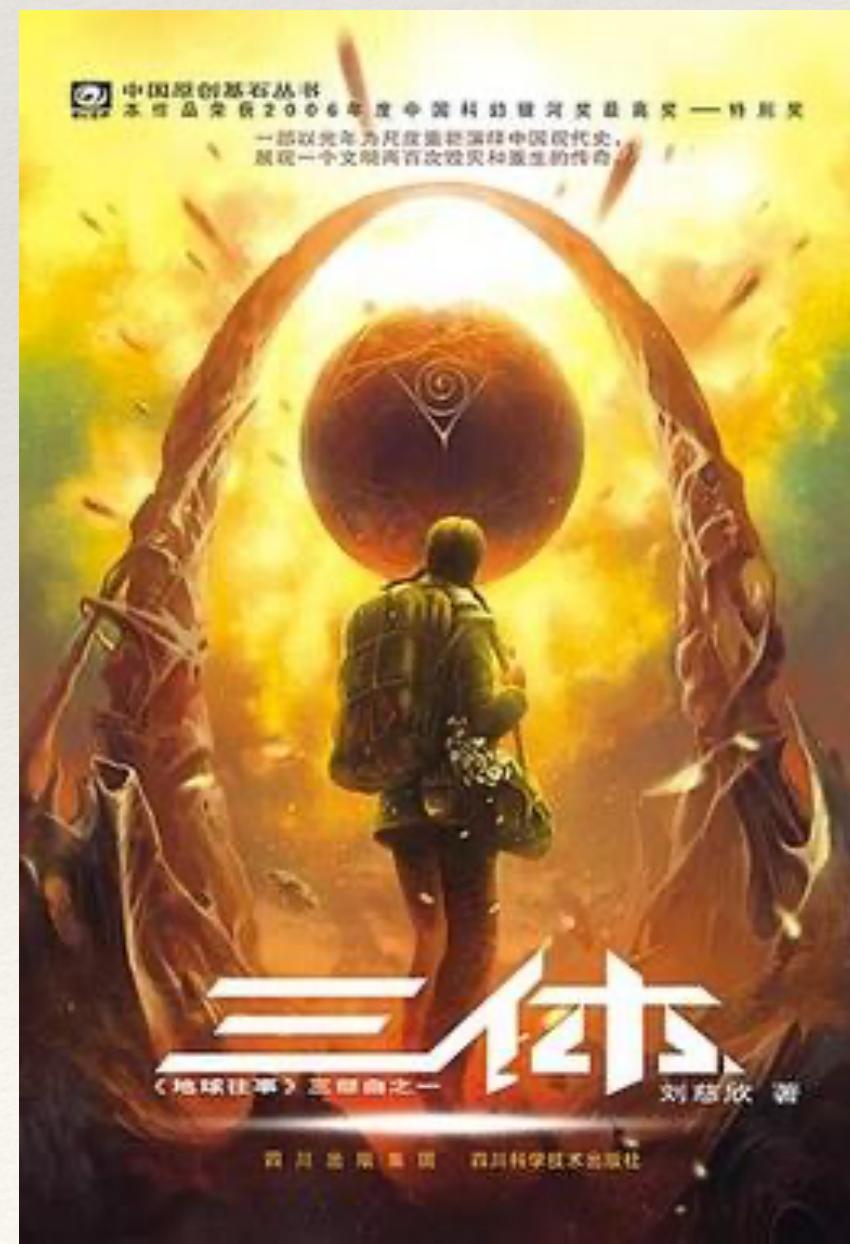
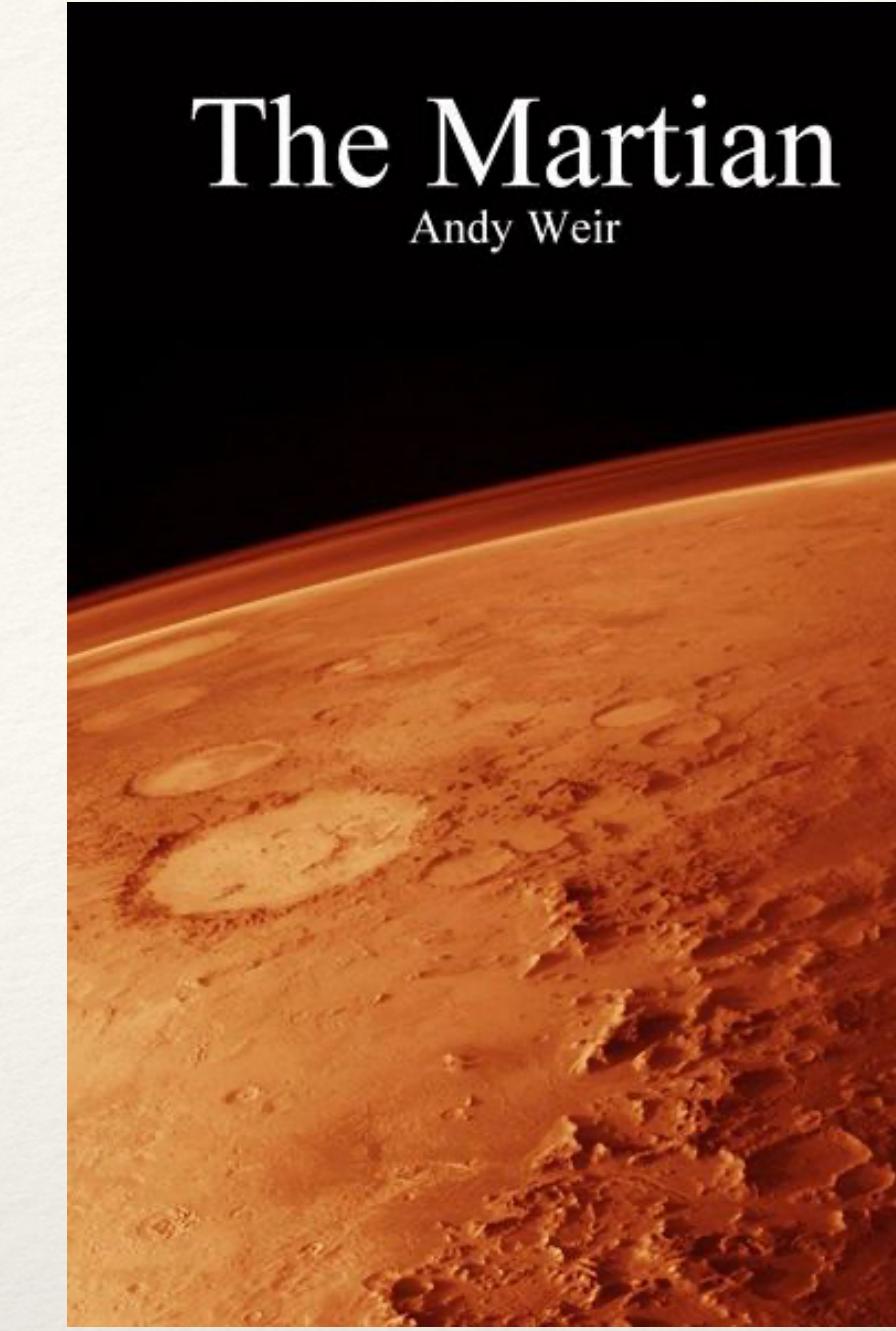
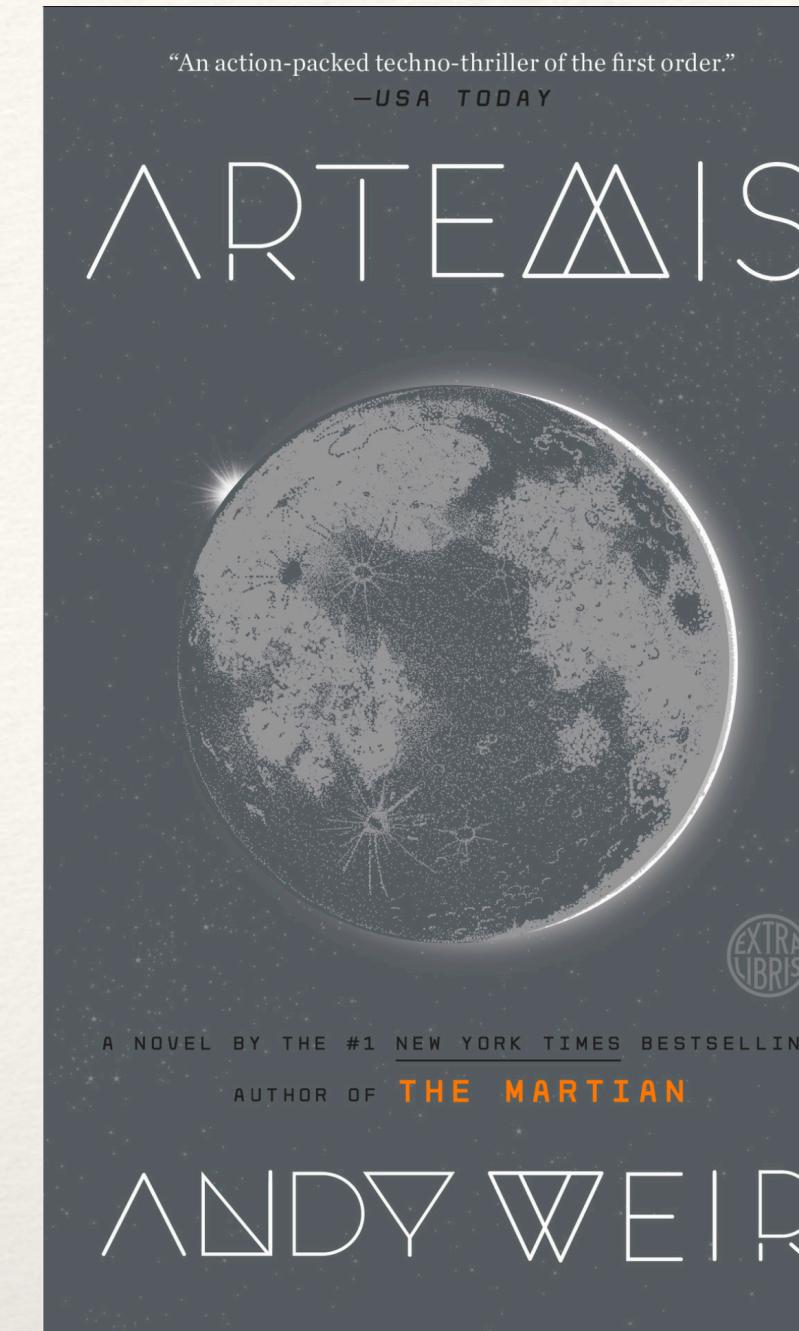
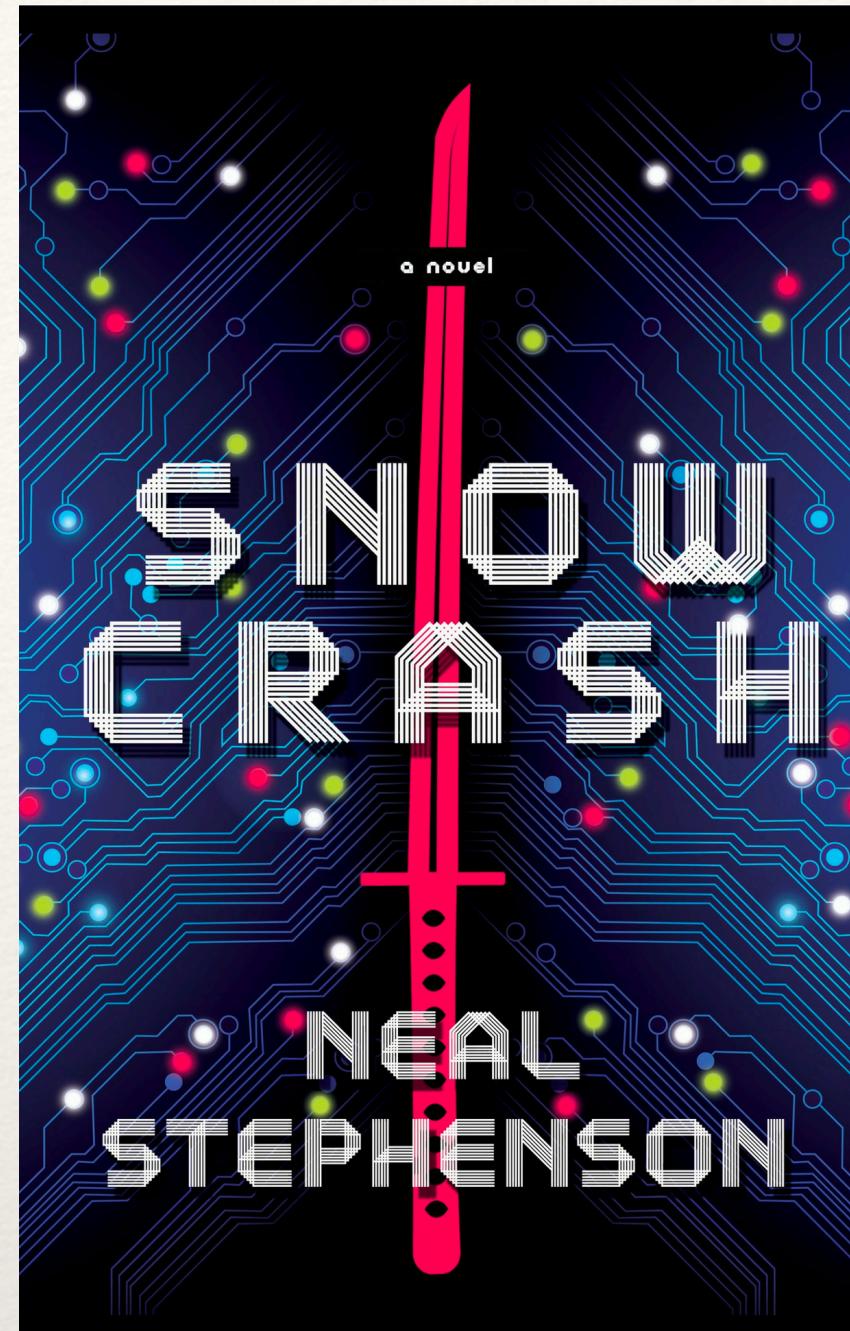


Programs and data stay in memory even when the Pocket Computer is turned off. And it can also function just like a calculator—something a desktop computer can't do. "With a TRS-80 Pocket Computer, you can hold the future in the palm of your hand." Add our \$79.95 Minisette® 9 cassette recorder and a Cassette Interface for \$29.95, or a Cassette Interface with built-in printer for \$127.95. They're all as close as your nearby Radio Shack store, dealer or Computer Center.

I want a glimpse of the future— send me a TRS-80 computer catalog.	Radio Shack, Dept. 82-A-367 1300 One Tandy Center Fort Worth, Texas 76102
NAME _____	
ADDRESS _____	
CITY _____ STATE _____ ZIP _____	

Radio Shack
The biggest name in little computers®

Retail prices may vary at individual stores and dealers.



Some References

- ❖ Encyclopedia of Science Fiction. <https://sf-encyclopedia.com/entry/brazil>
- ❖ The Hugo Awards. <https://www.thehugoawards.org/hugo-history/>
- ❖ The Nebula Awards. <https://nebulas.sfwa.org/award-year/2022/>