

Computer Science Fiction

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



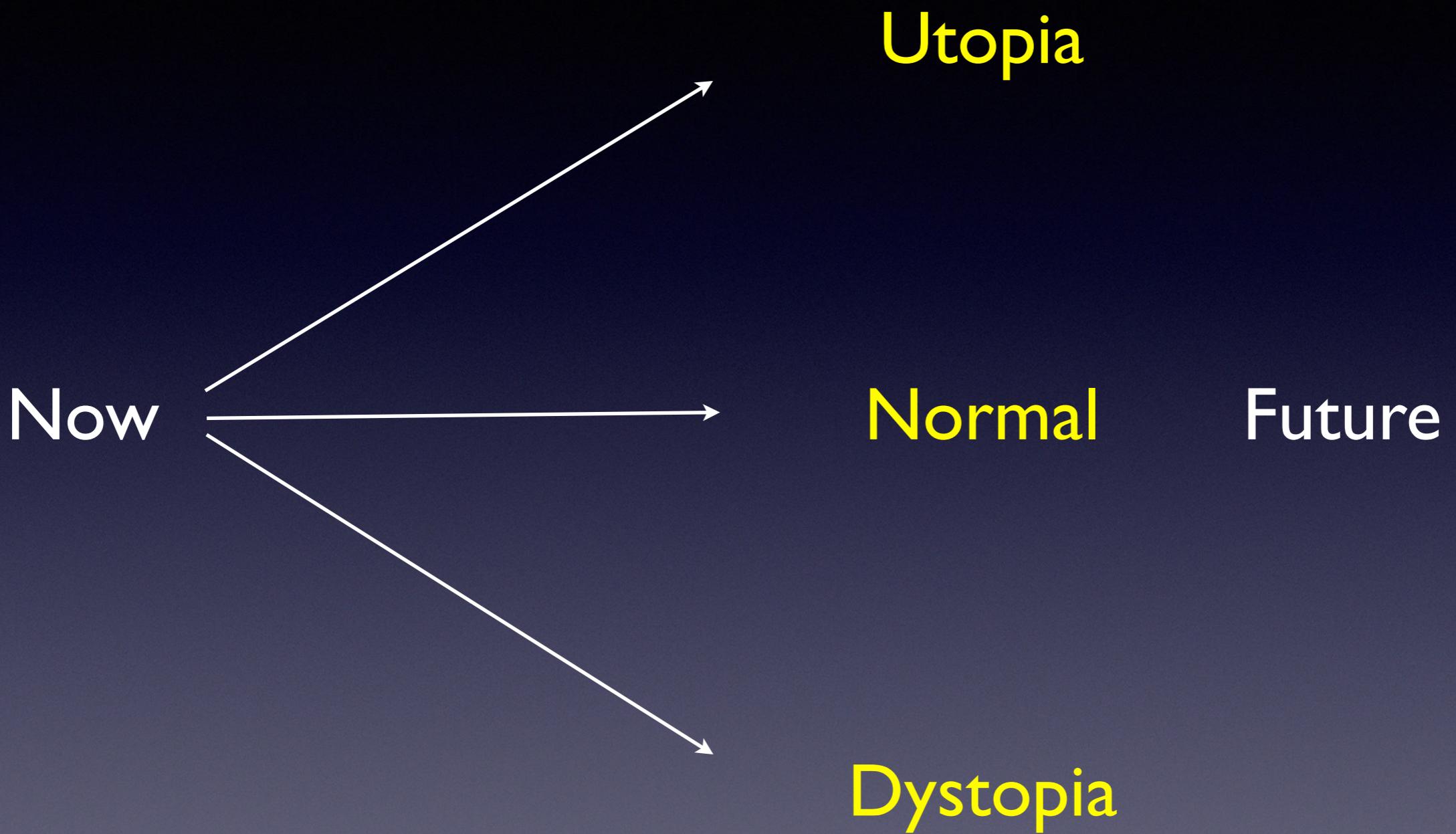


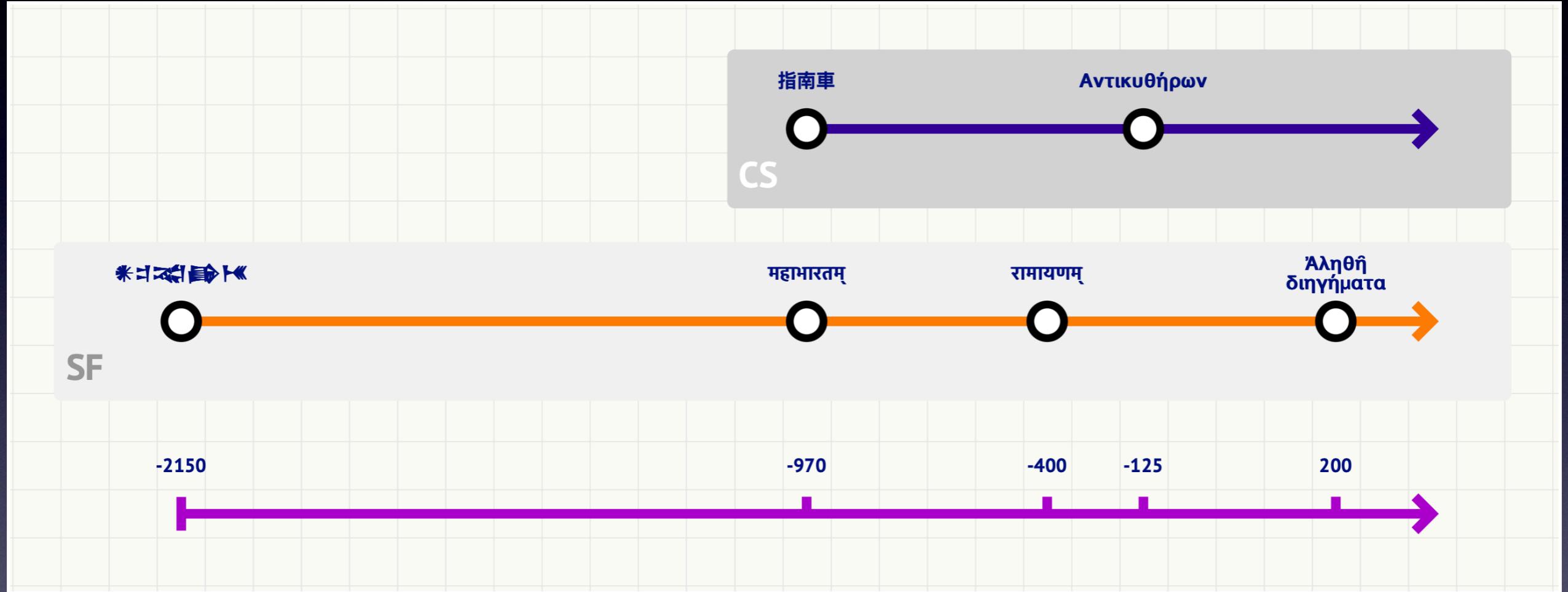
Computer Science

- 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)

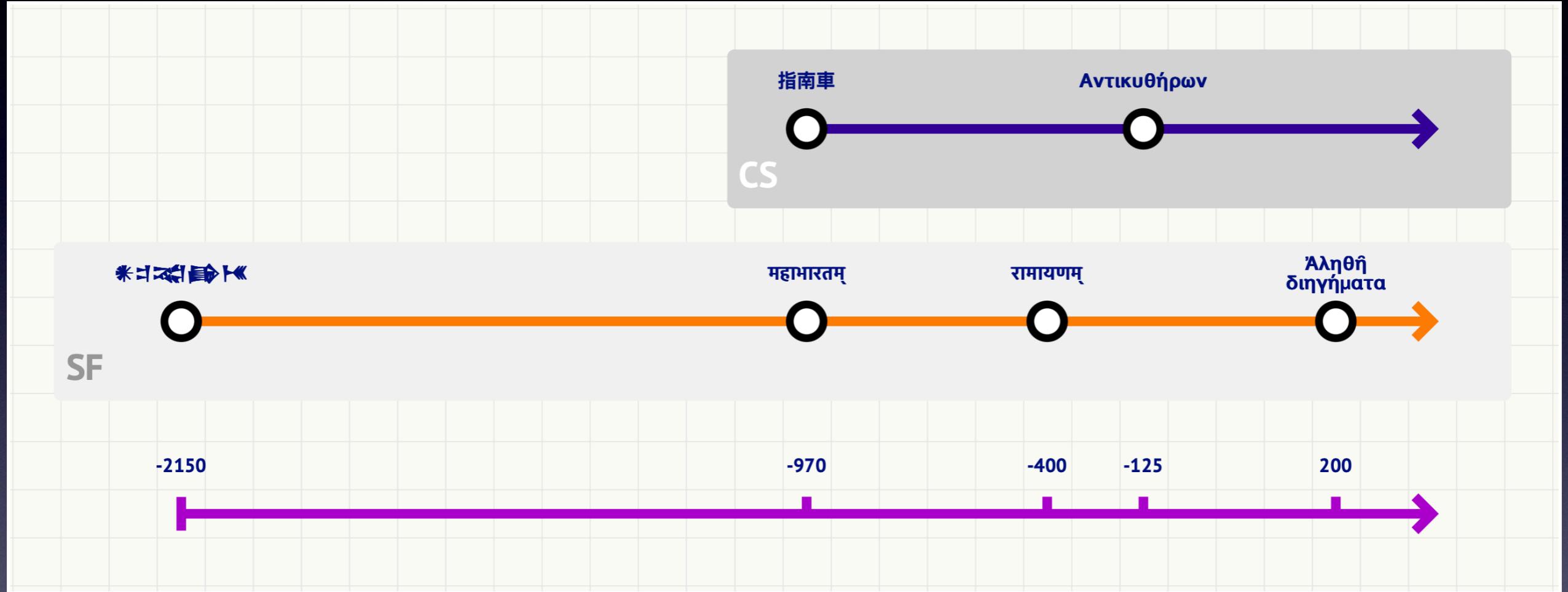
Science Fiction

- 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

computer post-human
cybernetic artificial reincarnation
cyborg holographic memory matrix neuro-piracy
technological singularity
android simulated reality time traveling
robot cyberspace 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.”

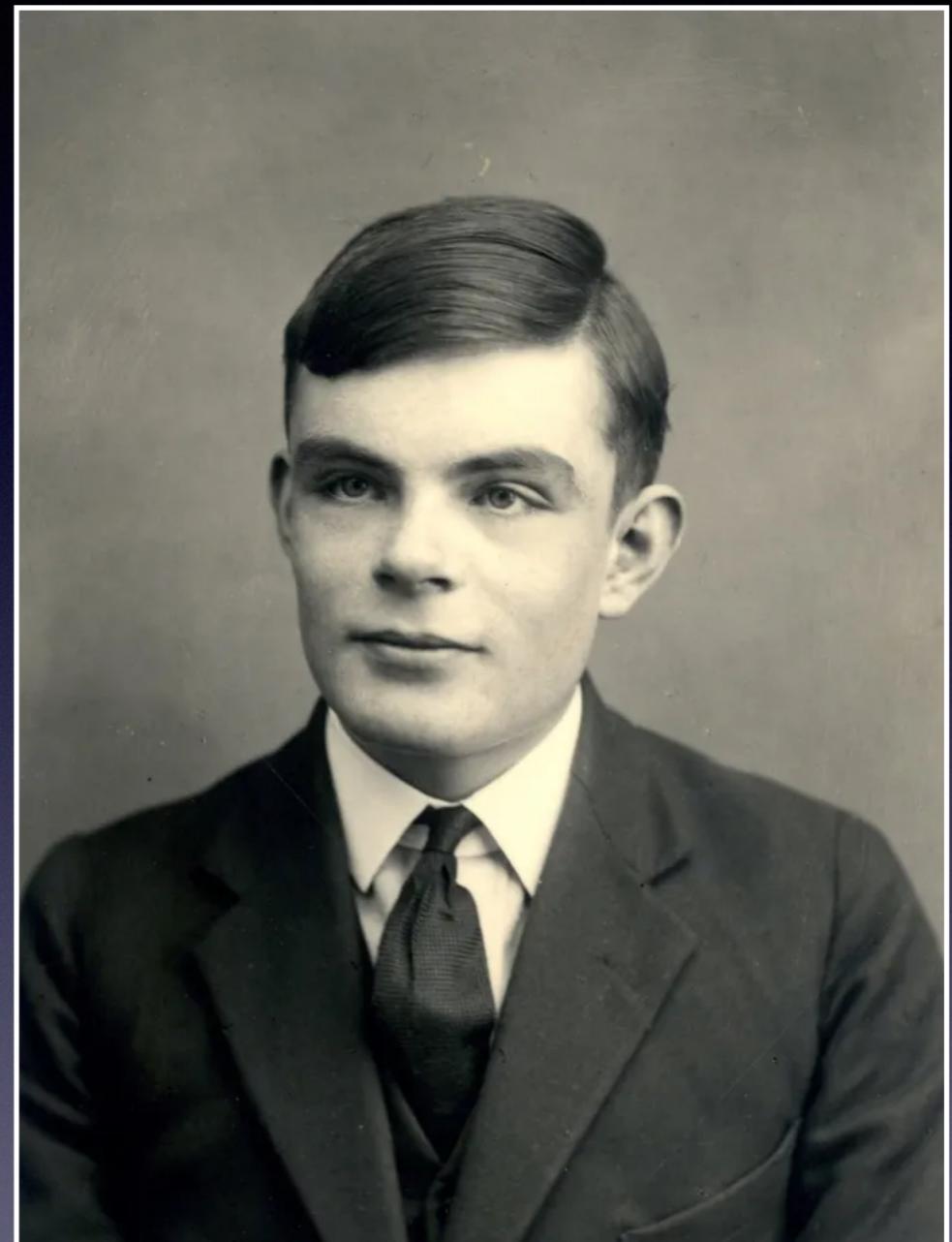
Church (1941) The calculi of lambda-conversion

Redes Neurais e o Cérebro Positrônico de Asimov

- As redes neurais convolucionais, usadas para tarefas como reconhecimento de imagens e processamento de linguagem natural lembram a complexidade e a opacidade do cérebro positrônico descrito por Isaac Asimov
- Assim como o cérebro positrônico, as redes neurais operam em uma escala e complexidade além da compreensão humana.
- Ambos são sistemas que simulam a cognição humana, mas de maneiras que desafiam nossa capacidade de entendê-los.

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

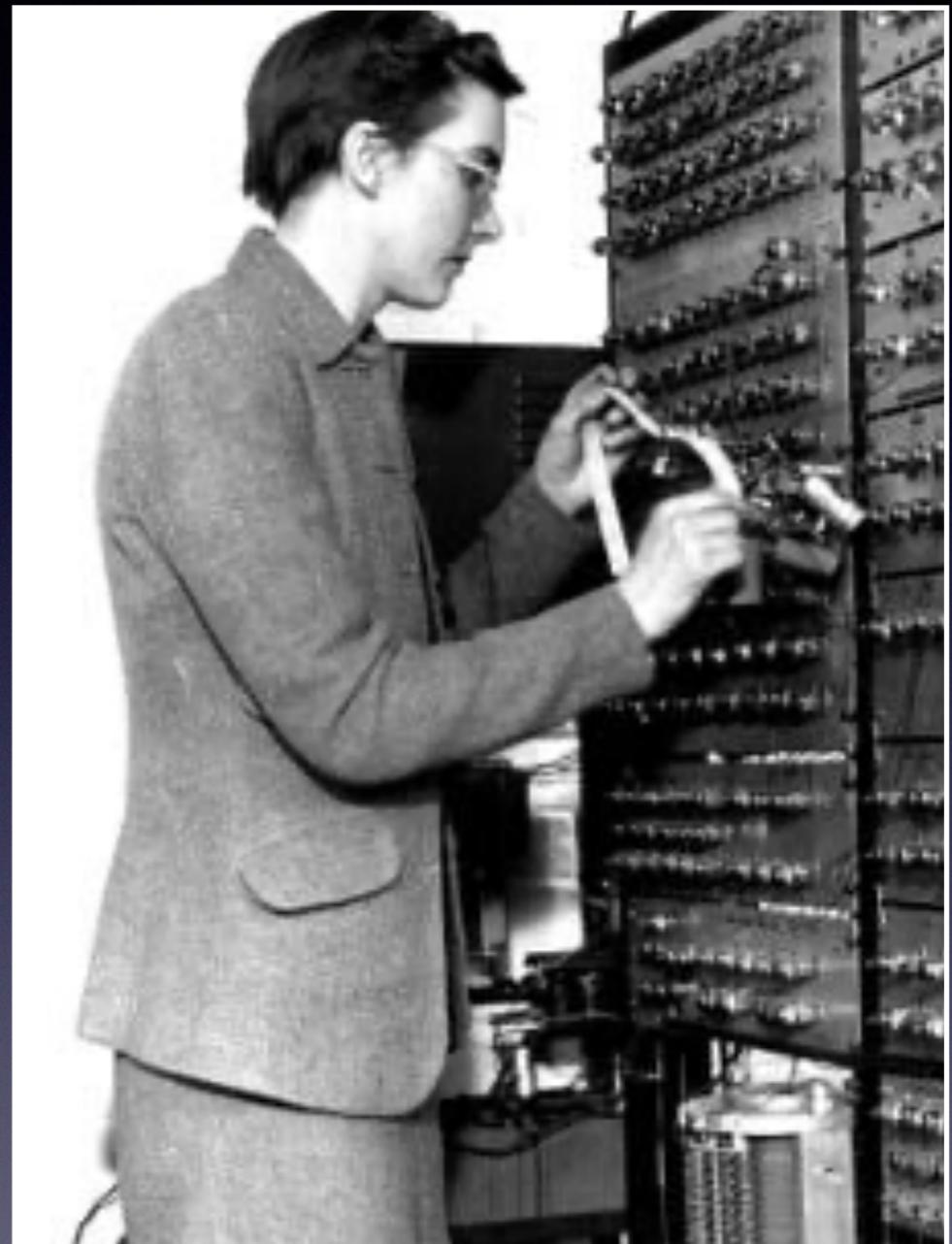


- The considerations which follow deal with the structure of a *very high speed automatic digital computing system*, and in particular with its *logical control*.

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.O, 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?

Science Fiction Writers

Čapek 1890 - 1938

Rossumovi univerzální roboti
1920



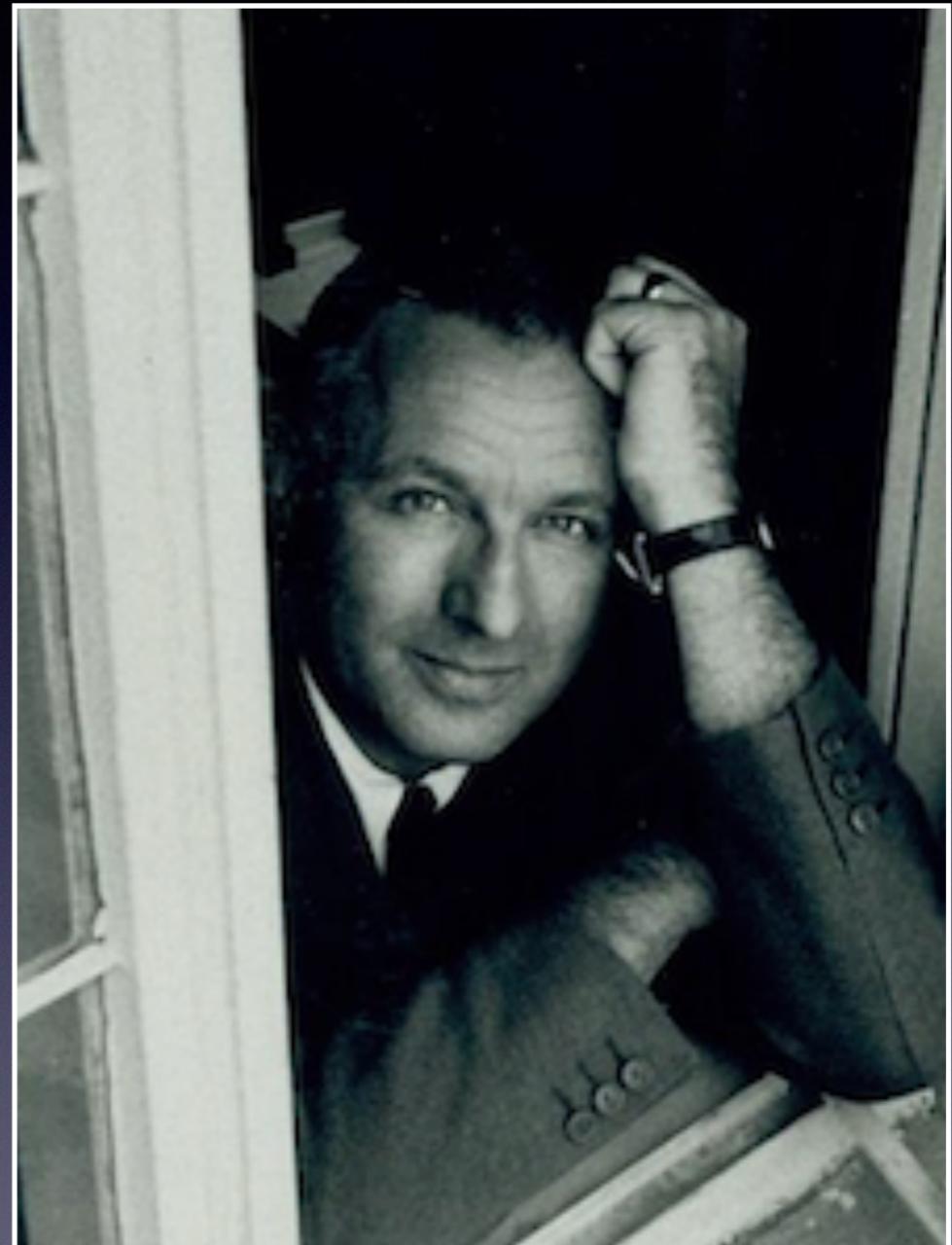
Asimov 1920-1992

Foundation 1951



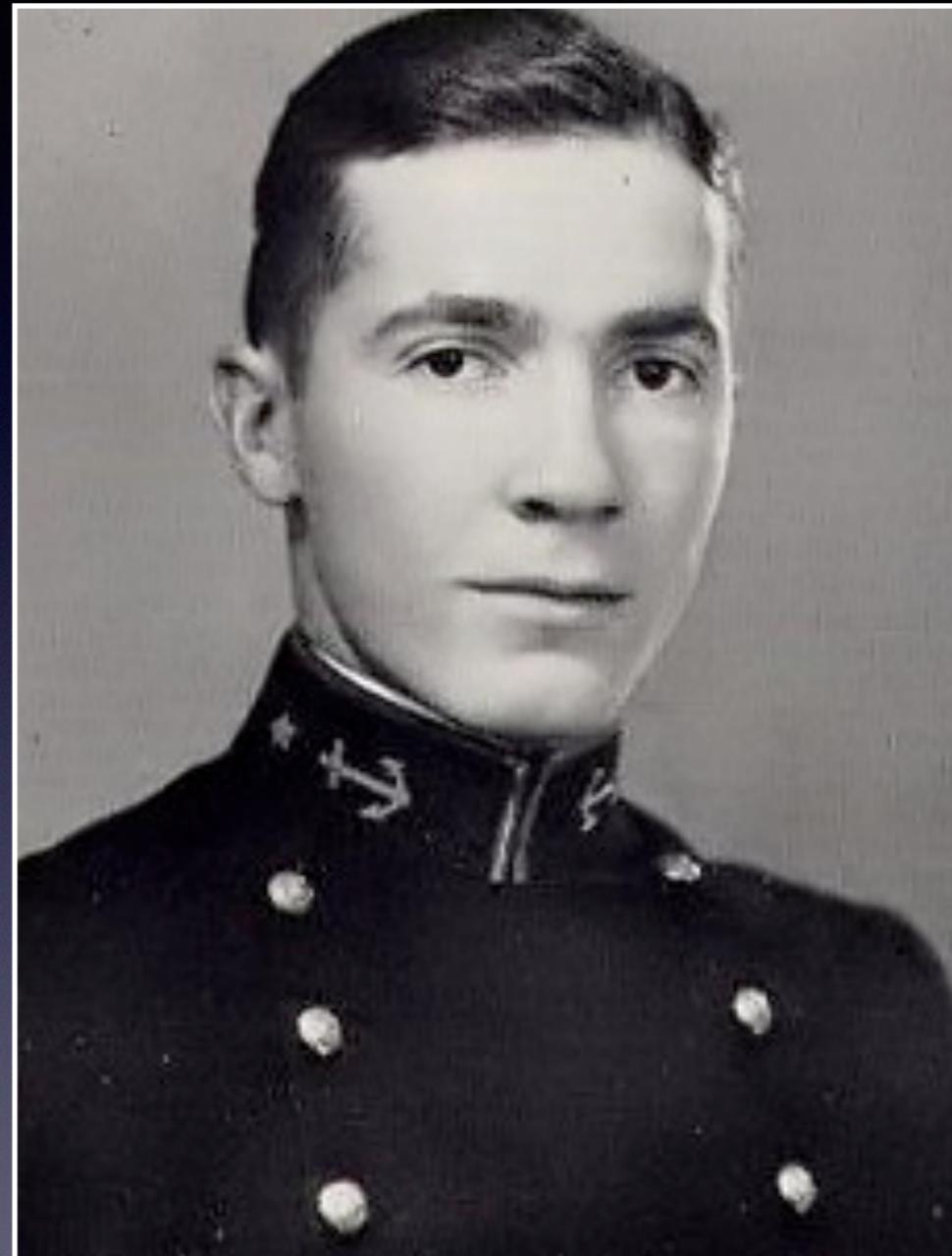
Bradbury 1920-2012

The Martian Chronicles 1950
Fahrenheit 451 1953



Heinlein 1907-1988

All You Zombies 1958
Starship Troopers 1959
Stranger in a Strange Land 1961



Lem
1921-2006

Solaris 1961
Pamiętnik znaleziony w wannie
1961



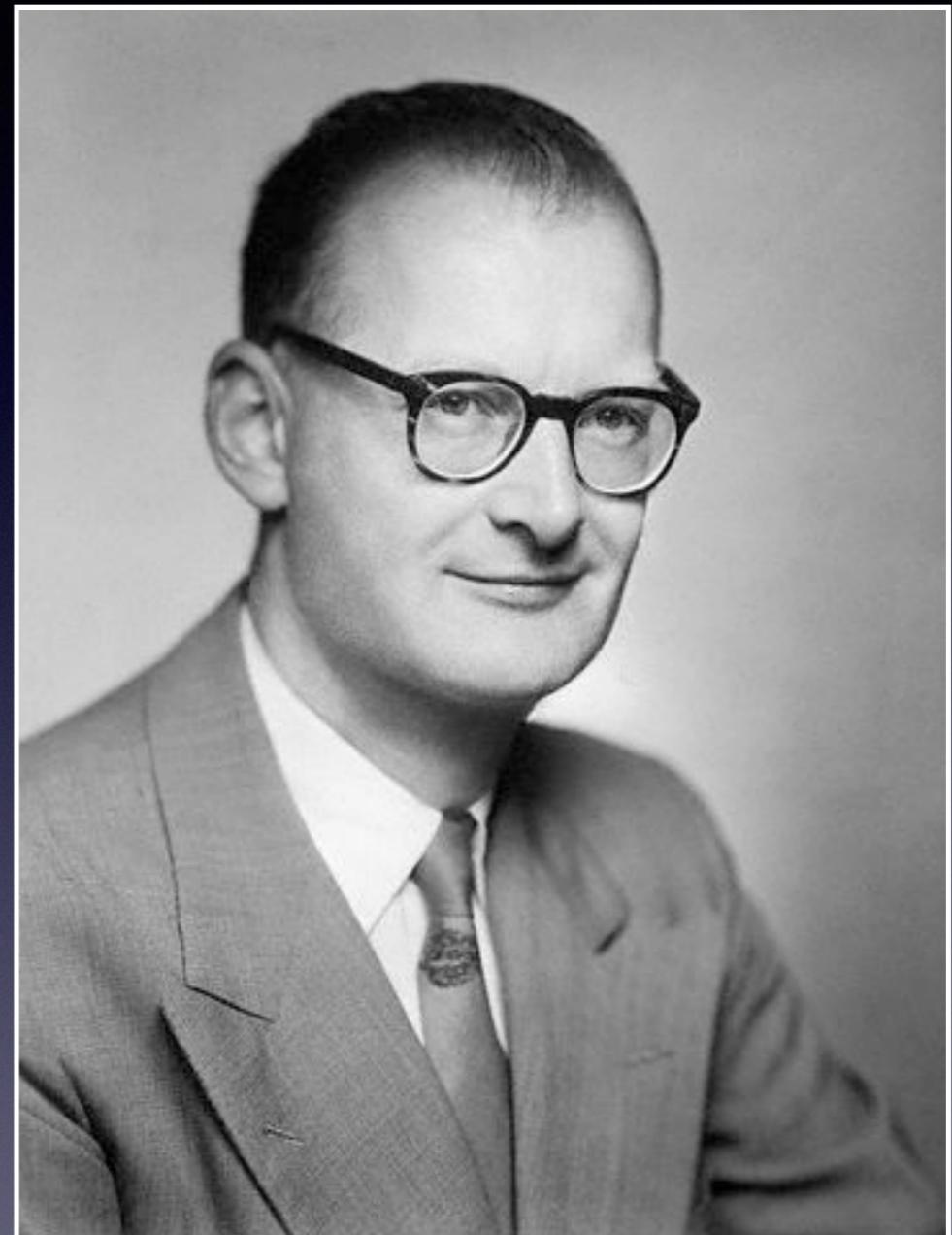
Boulle
1912-1994

La Planète des Singes 1963



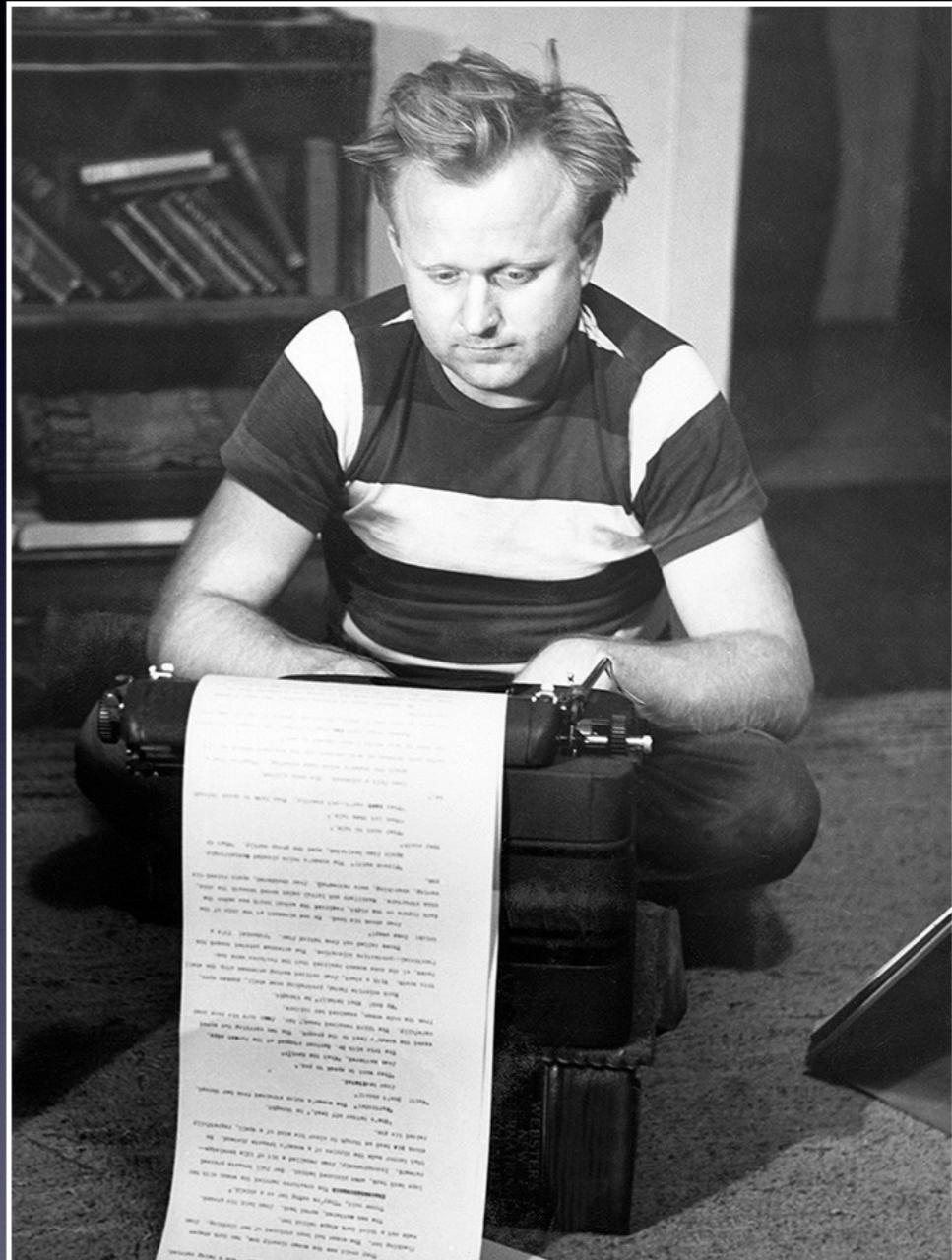
Clarke 1917- 2008

The Sentinel 1948
2001:A Space Odyssey 1964



Herbert 1920-1986

Dune 1965
Destination Void 1966
The Dosadi Experiment 1977



Dick 1928-1982

Second Variety 1953
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



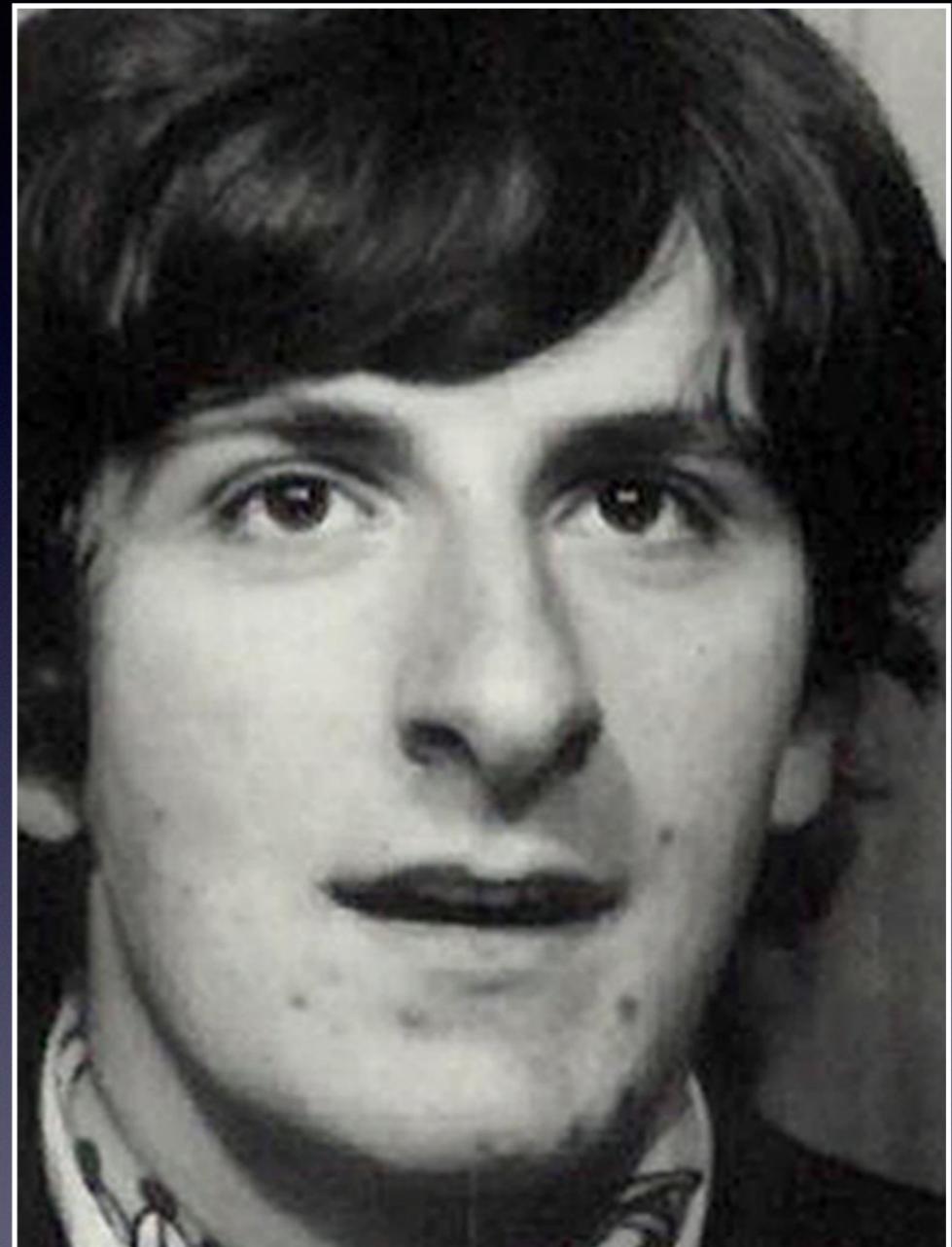
Russ
1937-2011

And Chaos Died 1970
The Female Man 1975



Adams | 1952-2001 |

The Hitchhiker's Guide to the
Galaxy | 1979



Gibson 1948-

Burning Chrome 1982
Neuromancer 1984



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)

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)

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**"A Few Years Ago,
the Idea of a
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Was Just
Science Fiction."**

—Isaac Asimov
Renowned Science and
Science-Fiction Author



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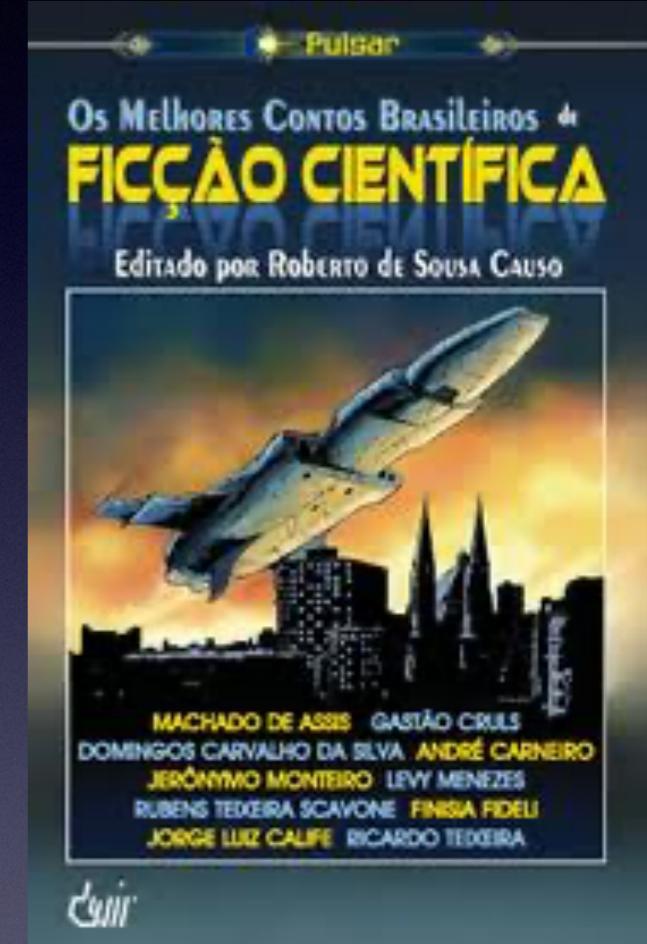
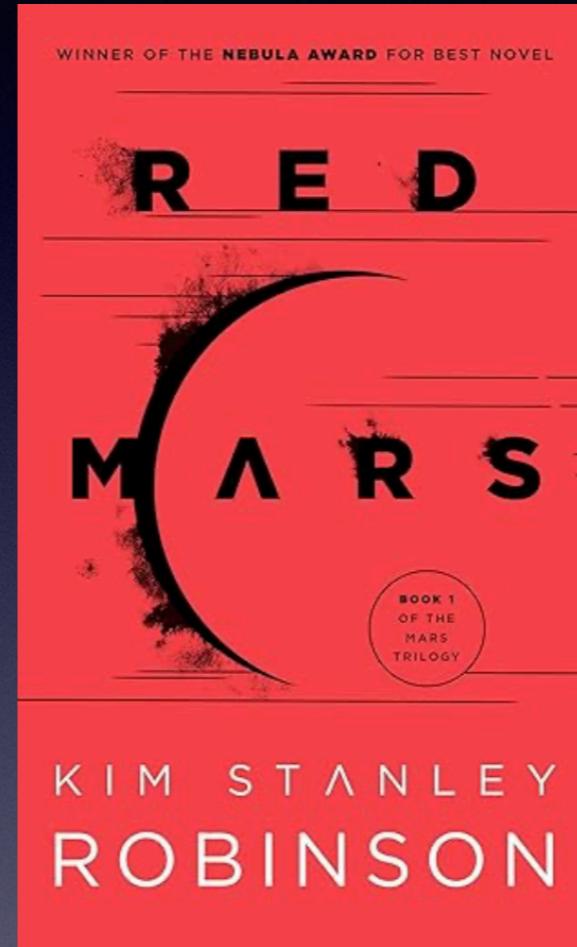
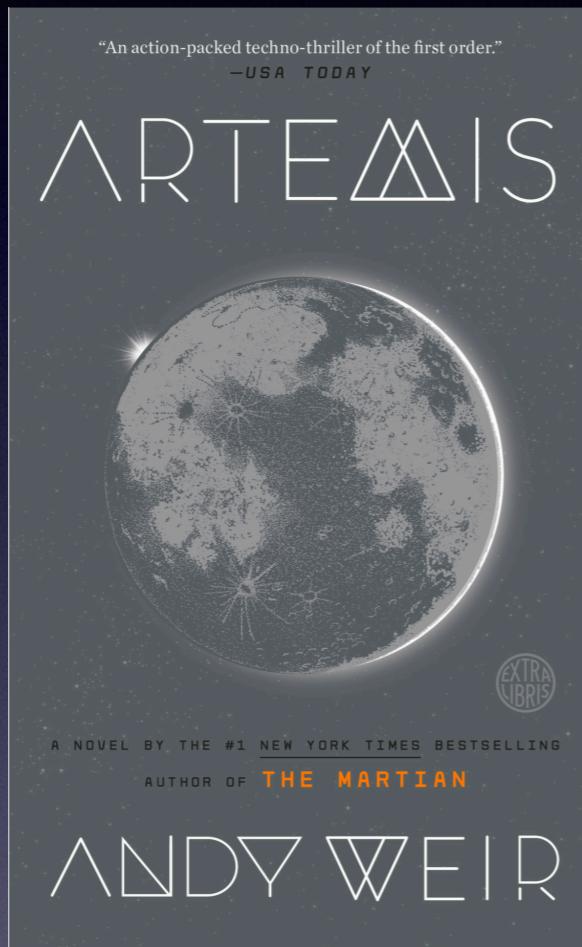
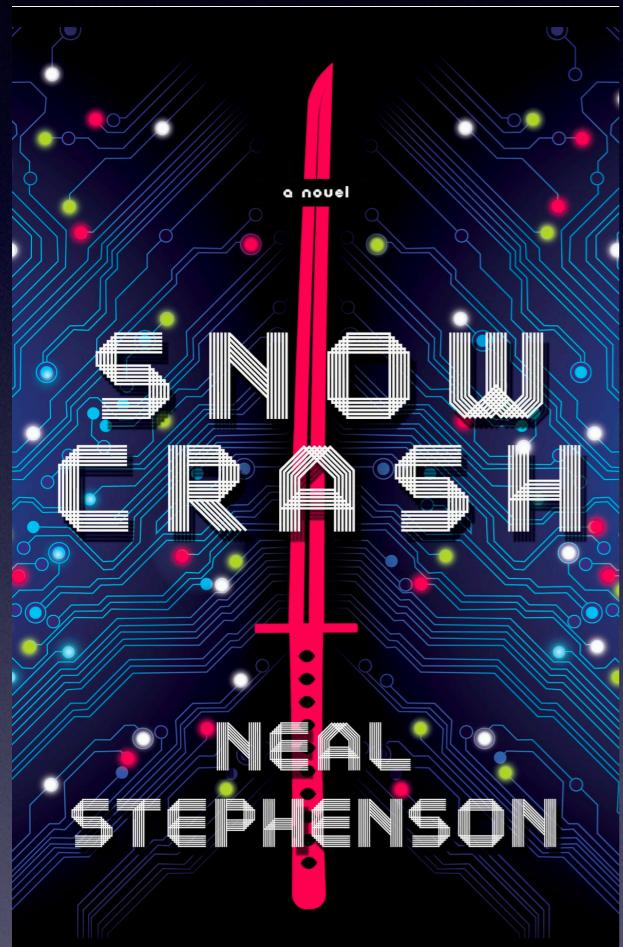
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Some References

- 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/>