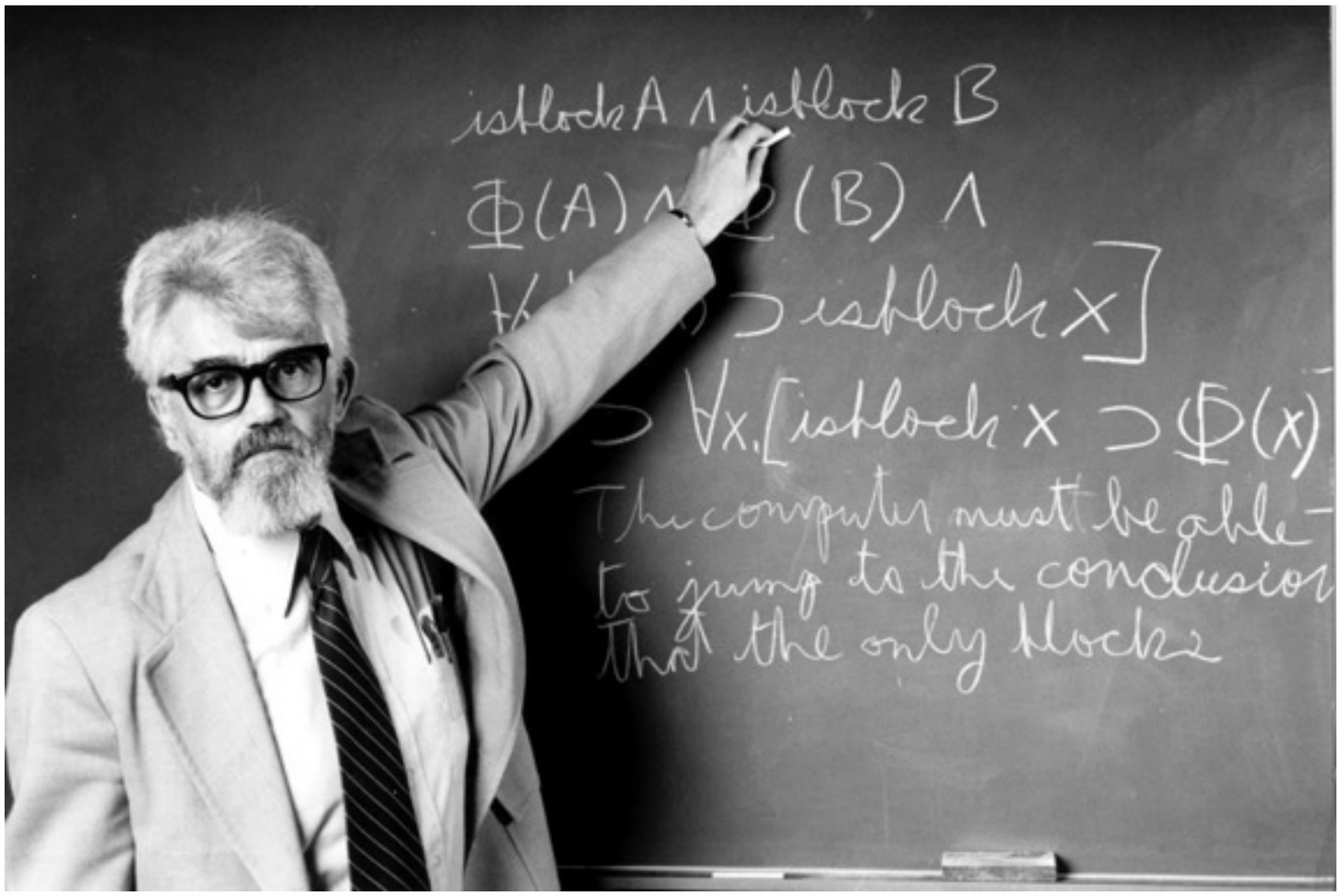
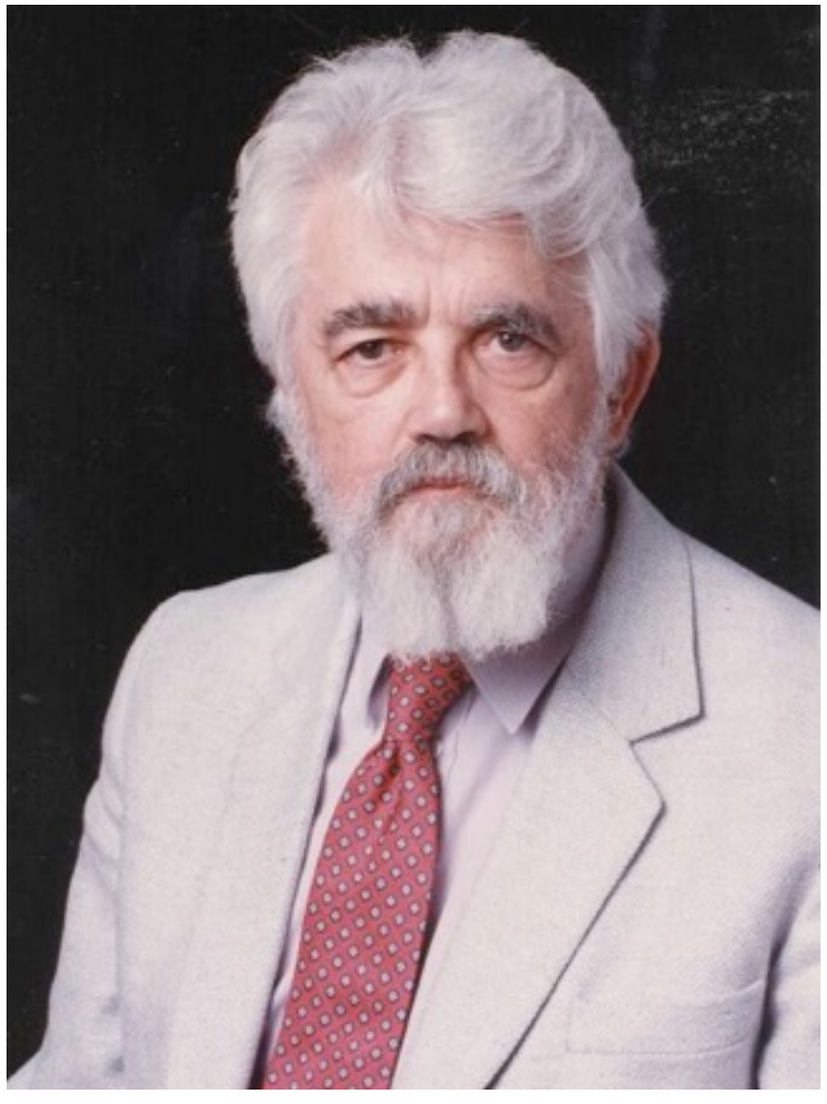


John McCarthy

Creator Of Lisp

Dude was for real

- Computer scientist
- Cognitive scientist
- Coined the term "artificial intelligence"
- Developed Lisp
- Popularized timesharing.
- Invented “garbage collection”



Not that kind of timesharing

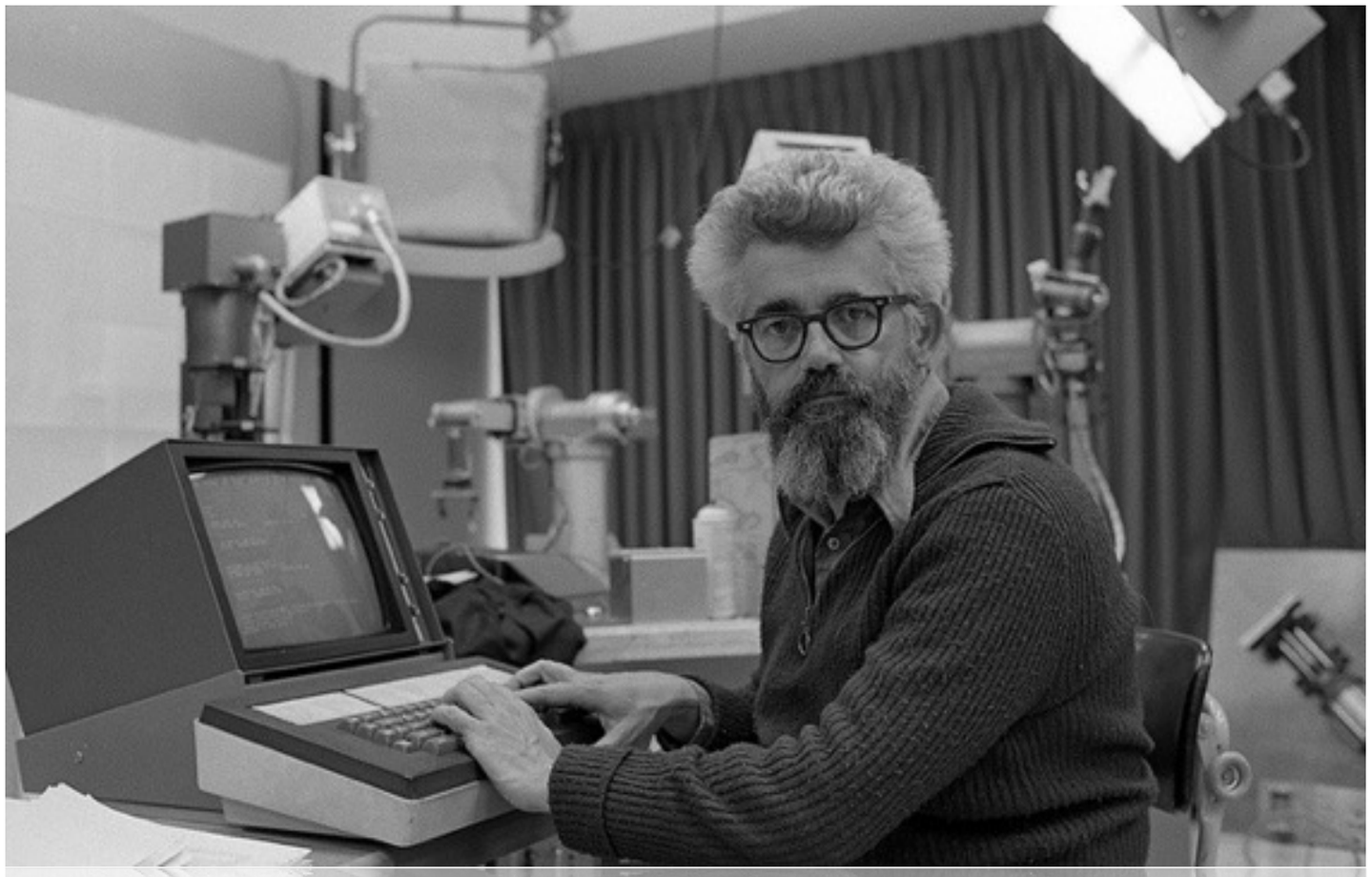
Time-sharing

- In computing, time-sharing is the sharing of a computing resource among many users by means of multiprogramming and multi-tasking. Its introduction in the 1960s, and emergence as the prominent model of computing in the 1970s, represents a major technological shift in the history of computing.
- By allowing a large number of users to interact concurrently with a single computer, time-sharing dramatically lowered the cost of providing computing capability, made it possible for individuals and organizations to use a computer without owning one, and promoted the interactive use of computers and the development of new interactive applications.

Batch Processing

Time-sharing

The earliest computers were extremely expensive devices, and very slow. Machines were typically dedicated to a particular set of tasks and operated by control panels, the operator manually entering small programs via switches in order to load and run a series of programs. These programs might take hours, or even weeks, to run. As computers grew in speed, run times dropped, and soon the time taken to start up the next program became a concern. Batch_processing methodologies evolved to decrease these "dead periods" by queuing up programs so that as soon as one program completed, the next would start.



Let there be Lisp!

Lisp

- Developed in 1958 at MIT
- The name LISP derives from "LISt Processing".
- Lisp is the second-oldest high-level_programming language in widespread use today.
- Published its design in a paper in Communications of the ACM in 1960
- Showed that with a few simple operators and a notation for functions, one can build a Turing-complete language for algorithms.

Turing Complete?

- A system of data-manipulation rules (such as a computer's instruction set, a programming language, or a cellular automaton) is said to beTuring complete or computationally universal if it can be used to simulate any single-taped Turing machine.

Lisp

Pioneered a bunch of important computing concepts

- Tree data structures
- Automatic storage management
- Dynamic typing
- Conditionals
- Higher-order function
- Recursion

Lisp

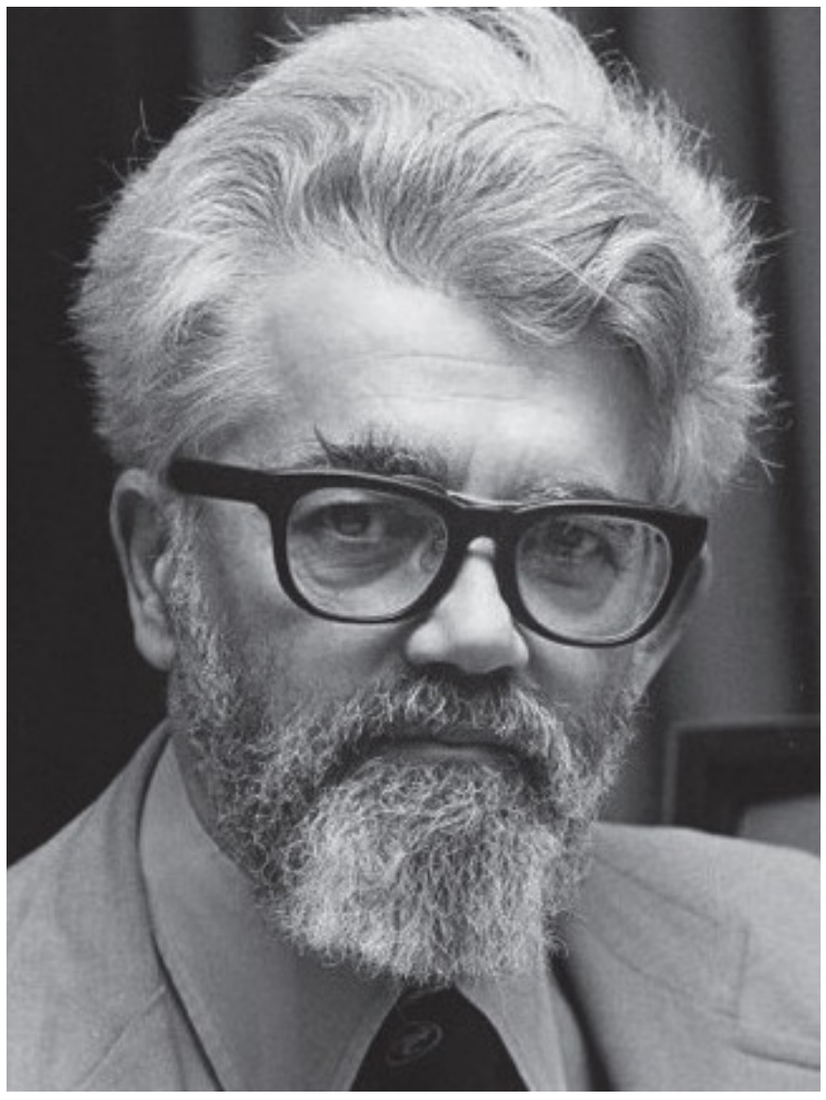
```
(list '1 '2 'foo)

(if nil
    (list 1 2 "foo")
    (list 3 4 "bar"))

((lambda (arg) (+ arg 1)) 5)
```

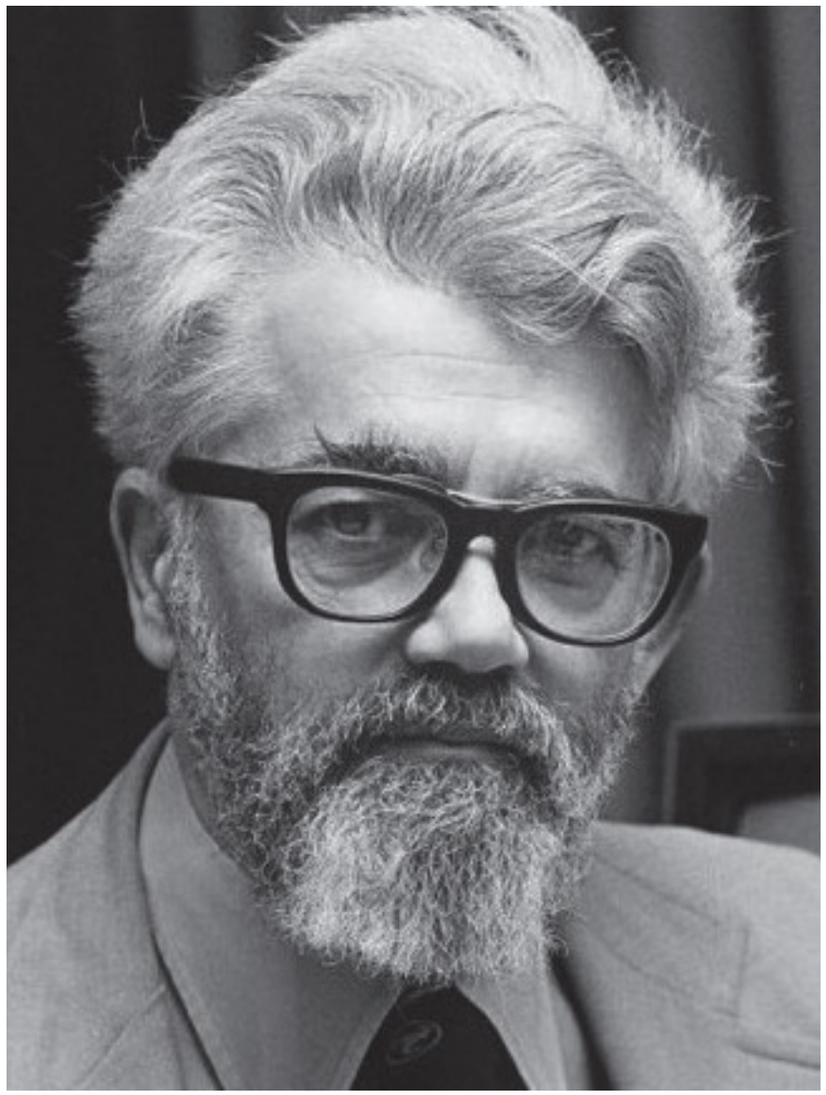
Oh hai

- Organized the first international conference to emphasize artificial intelligence
- Championed mathematical logic for A.I.



Oh hai

- Turing Award
- National Medal of Science (USA) in Mathematical, Statistical, and Computational Sciences
- Fellow of the Computer History Museum



On design

“Program designers have a tendency to think of the users as idiots who need to be controlled. They should rather think of their program as a servant, whose master, the user, should be able to control it. If designers and programmers think about the apparent mental qualities that their programs will have, they'll create programs that are easier and pleasanter — more humane — to deal with.”

On AI & knowledge

It's difficult to be rigorous about whether a machine really 'knows', 'thinks', etc., because we're hard put to define these things. We understand human mental processes only slightly better than a fish understands swimming.

On solving problems

He who refuses to do arithmetic is doomed to talk nonsense.