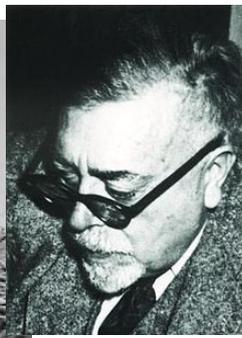
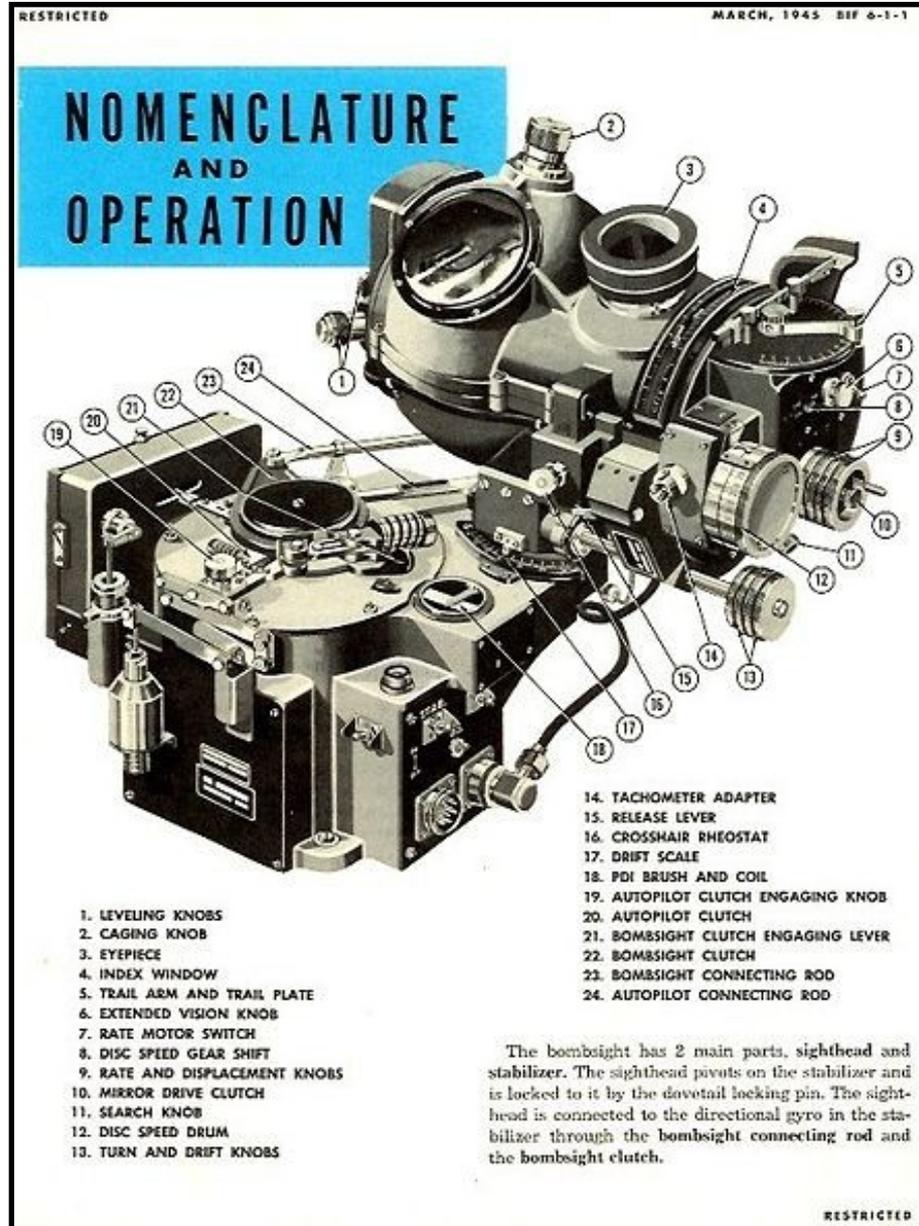


historical overview

Burak Galip ASLAN, PhD



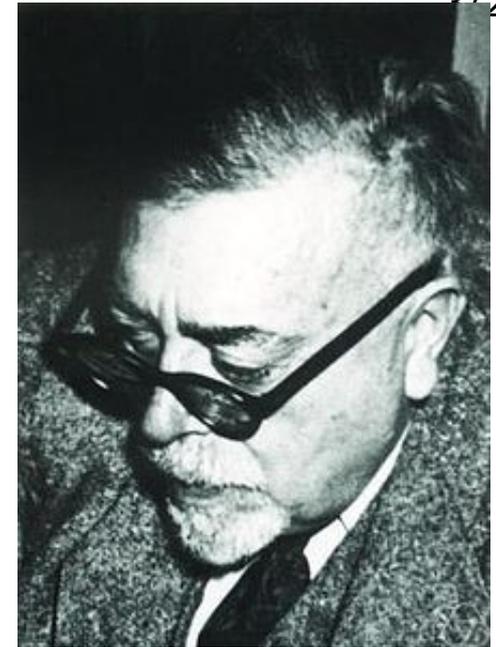
Norbert Wiener (1894 – 1964), MIT mathematics, professor, anti-aircraft cannon tracking system



Norden Bombsight of USAAF, Vietnam, Korea, analog computer, bomb trajectory calculation (23m but 370m!)

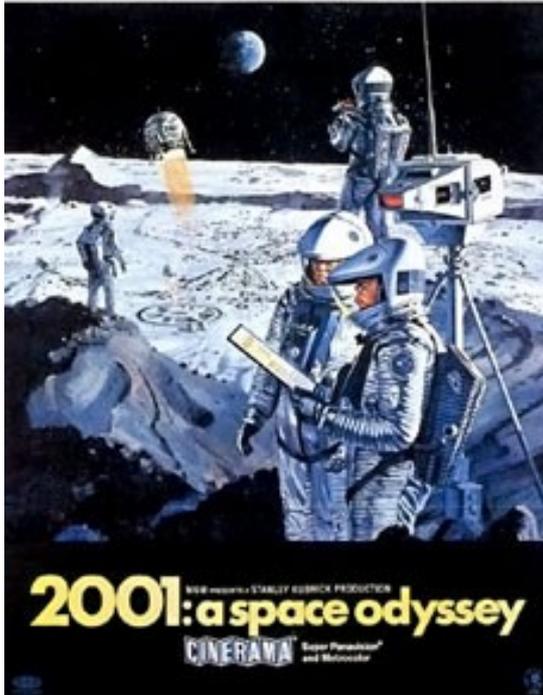
In his 1948 book on Cybernetics he wrote:

“It has long been clear to me that the modern ultra-rapid computing machine was in principle an ideal central nervous system to an apparatus for automatic control; and that its input and output need not be in the form of numbers or diagrams but might very well be, respectively, the readings of artificial sense organs, such as photoelectric cells or thermometers, and the performance of motors or solenoids... we are already in a position to construct **artificial machines** of almost any degree of elaborateness of performance. **Long before Nagasaki and the public awareness of the atomic bomb, it had occurred to me that we were here in the presence of another social potentiality of unheard-of importance for good and for evil.**” (pp. 27-28)



Norbert Wiener
1894 –
1964

An epic drama of
adventure and exploration



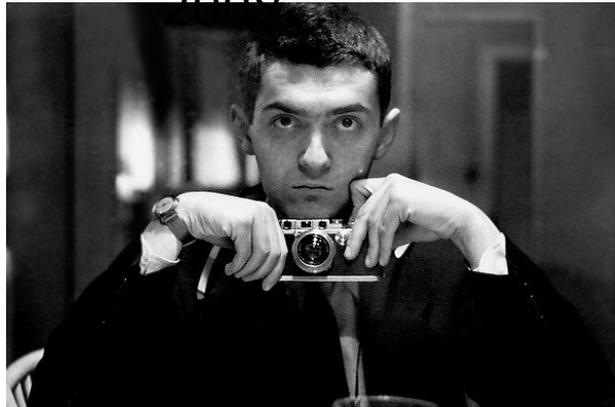
1968



artificial intelligence

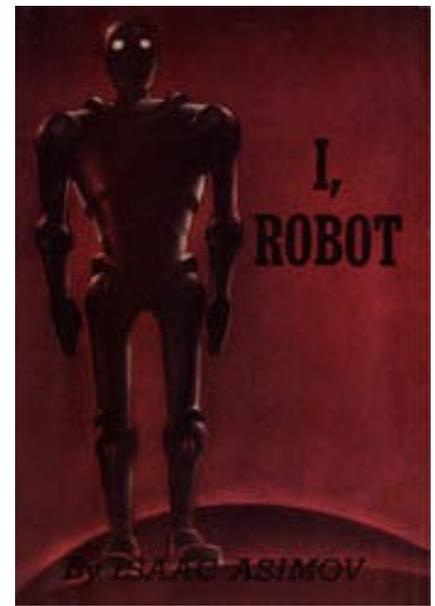


Arthur C. Clarke
1917 –
2008

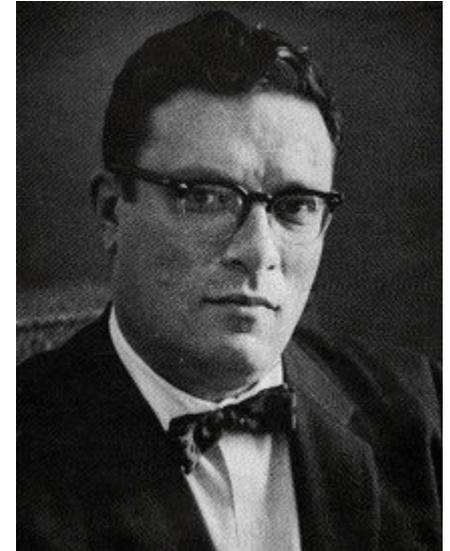


Stanley Kubrick
1928 –
1999

*not exactly ethical, fear, terrible
consequences, degradation of
human life*



1950



Isaac Asimov
1920 – 1992

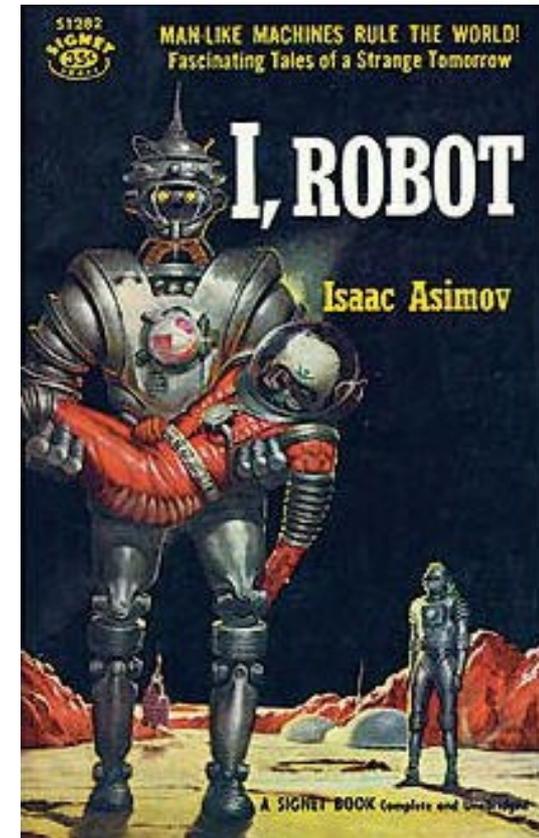
three laws of robotics

- 1) A robot may not injure a human being or, through inaction, allow a human being to come to harm.
- 2) A robot must obey the orders given it by human beings except where such orders would conflict with the First Law.
- 3) A robot must protect its own existence as long as such protection does not conflict with the First or Second Laws.



1950

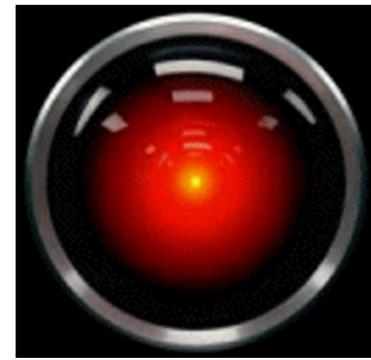
artificial intelligence



An epic drama of
adventure and exploration



hal 9000



- dave** : open the pod bay doors, please, hal.
hal : **i'm sorry dave, i'm afraid i can't do that.**
dave : what's the problem?
hal : **i think you know what the problem is just as well as i do.**
dave : what are you talking about, hal?
hal : **this mission is too important for me to allow you to jeopardize it.**
dave : i don't know what you're talking about hal...
hal : **i know you and frank were planning to disconnect me, and i'm afraid that's something i cannot allow to happen.**
dave : where the hell'd you get that idea, hal?
hal : **dave, although you took thorough precautions in the pod against my hearing you, i could see your lips move.**
dave : all right, hal; i'll go in through the emergency airlock.
hal : **without your space helmet, dave, you're going to find that rather difficult.**
dave : hal, i won't argue with you anymore! open the doors!
hal : **dave, this conversation can serve no purpose anymore. goodbye.**

1968



artificial intelligence

late 1970's

Mowshowitz, Abbe, *The Conquest of Will Information Processing in Human Affairs.*

(Redding, MA: Addison-Wesley, 1976)

Weizenbaum, Joseph, *Computer Power and Human Reason: From Judgement to Calculation*

(San Francisco: W.H.Freeman, 1976)

Moor, James H., "Are There Decisions Computers Should Never Make?" *Nature and System*, vol. 1

(1979), pp. 266-275

**ethical issues in the
"use of computers"
a branch of applied ethics**

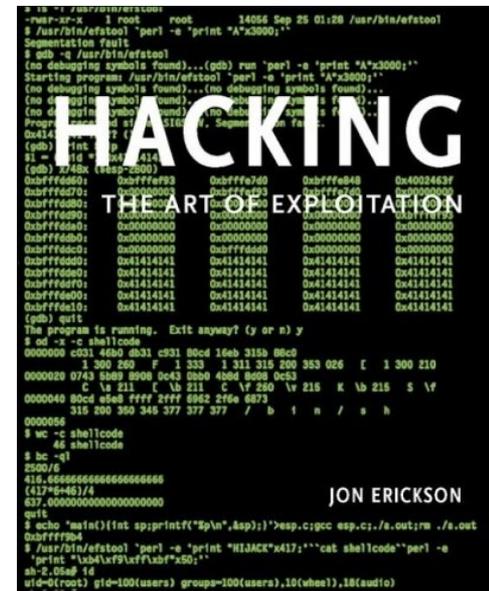
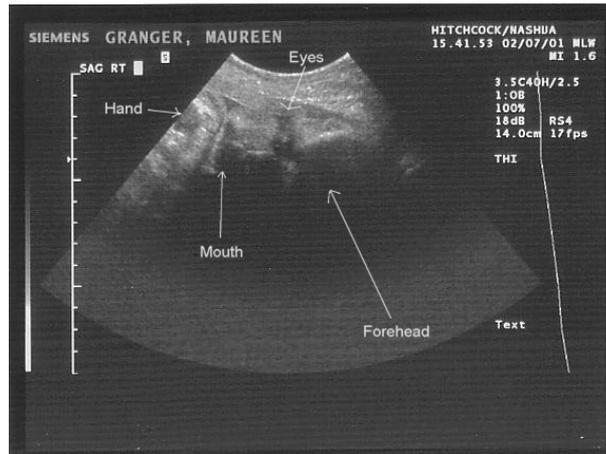
1972 – ACM's code of ethics, government threat, create and maintain huge databases, large-scale calculations, 1976 – privacy protection commission established





Ward Christensen (1945-) and the computer that ran the first public Bulletin Board System, **CBBS**

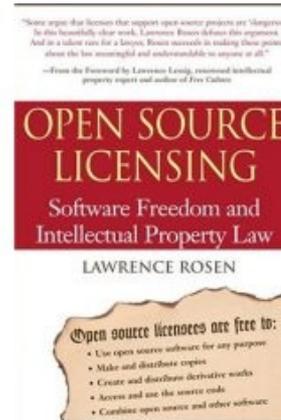
1980's



HACKING

THE ART OF EXPLOITATION

JON ERICKSON



microcomputers, PCs, remote access, sw ethical issues, intellectual property law -> then who to blame? who covers the loss?, games, hackers vs. business of computing, property rights protection and system security issues, also scientific modeling, virtual reality

1990's

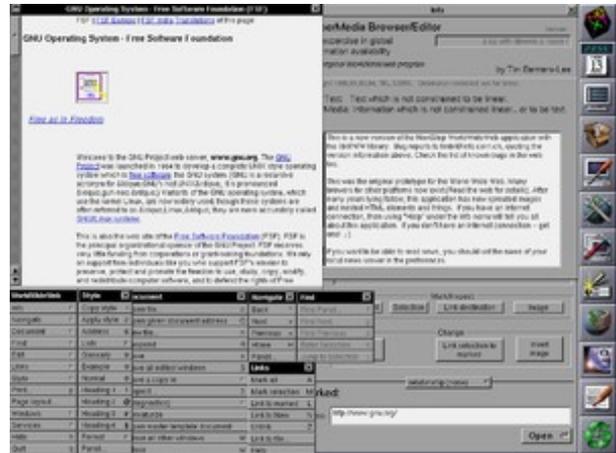
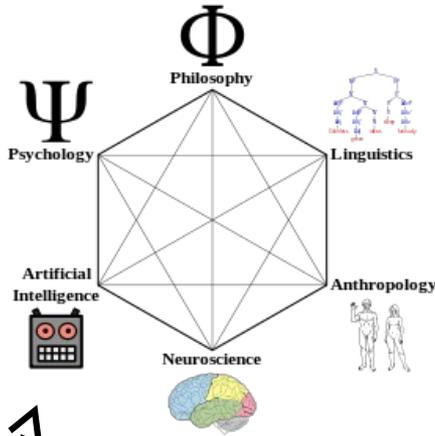
- rise of democracy?
- global property rights
- ...

1976 – X25 (BBS) and many others

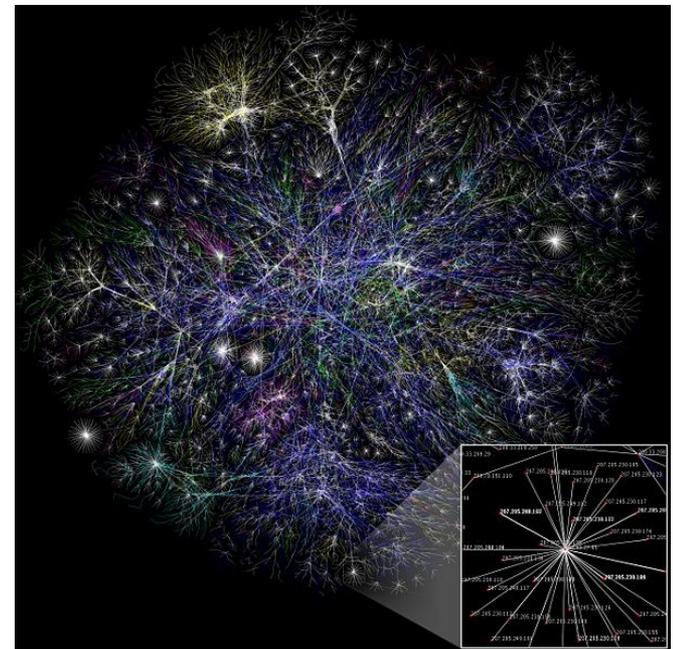
1981 – Arpanet: network of networks

1982 – TCP/IP (merge protocol)

1990 – WorldWideWeb (by Tim Berners Lee (1955-) (CERN – HTML)



the Internet



↑
cognitive science “idea of computers”

Bynum, Terrell Ward and Moor, James H., “The Digital Phoenix: How Computers are Changing Philosophy” British Journal of Philosophical Sciences, vol. 50 (1999), pp. 514-519

- social media
- e-commerce
- e-learning
- privacy
- ...

2000's



2010's

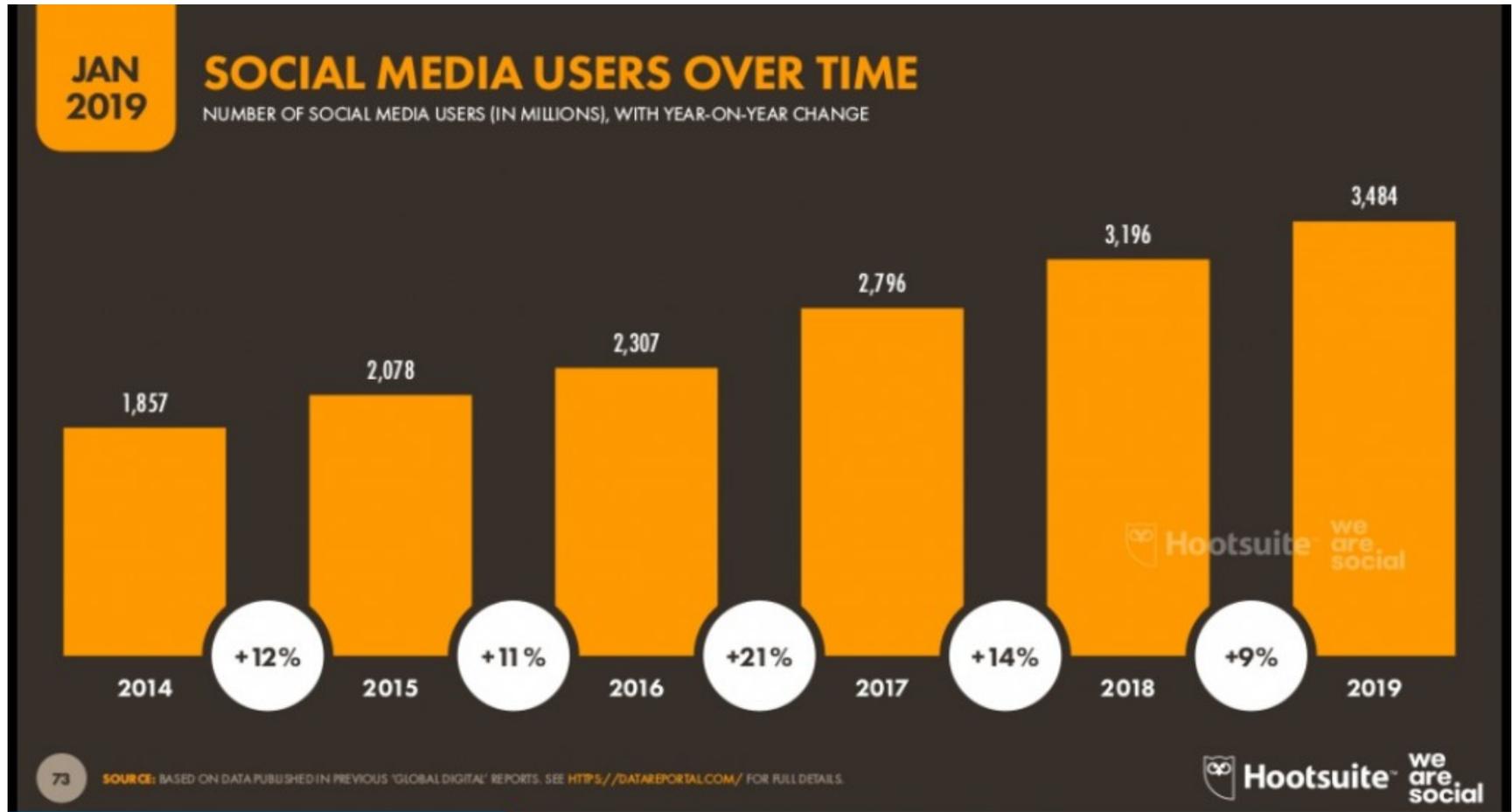
- ubiquitous computing (ubicomp)
- Internet of Things (IoT)
- World of Mouth
- e-integration
- industry 4.0



Social Media Landscape



taken from **ADHOLISTIC**



**OCT
2020**

DAILY TIME SPENT WITH MEDIA

THE AVERAGE AMOUNT OF TIME EACH DAY THAT INTERNET USERS AGED 16 TO 64* SPEND WITH DIFFERENT KINDS OF MEDIA AND DEVICES

USING THE
INTERNET



we
are
social

6H 55M

USING
SOCIAL MEDIA



global
web
index

2H 29M

WATCHING
TELEVISION*



3H 29M

LISTENING TO MUSIC
STREAMING SERVICES



global
web
index

1H 34M

USING A
GAMES CONSOLE



global
web
index

1H 14M

SOURCE: GLOBALWEBINDEX (Q2 2020). FIGURES REPRESENT THE FINDINGS OF A BROAD SURVEY OF INTERNET USERS AGED 16 TO 64. SEE [GLOBALWEBINDEX.COM](https://www.globalwebindex.com) FOR MORE DETAILS.
***NOTES:** TELEVISION TIME INCLUDES BROADCAST (LINEAR) TELEVISION AND CONTENT DELIVERED VIA STREAMING AND VIDEO-ON-DEMAND SERVICES. USE OF DIFFERENT DEVICES AND CONSUMPTION OF DIFFERENT MEDIA MAY OCCUR CONCURRENTLY.

we
are
social

 **Hootsuite®**

taken from **ADHOLISTIC**

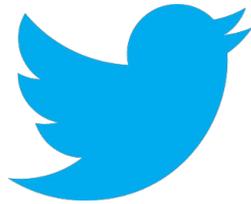


- 2.41 billion monthly active users
- 2.2 billion mobile active users
- 1,47 billion desktop active users
- 500 million Facebook Stories daily views.
- personal and business profiles
- 43% female and 57% male
- 82% of college graduates use Facebook
- the largest population comes from India (270 million users)
- 96% of users use Facebook on mobile devices



- 1 billion monthly active users
- 500 millions of daily active users
- 500 million Instagram Stories daily active users.
- 25 million businesses users
- 50,3% female and 49,7% male
- 32% of all Internet users are on Instagram
- 72% of teens use Instagram

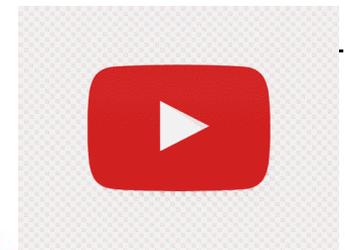
taken from **ADHOLISTIC**



- 330 million monthly active users
- 500 million tweets sent daily
- 80% users access Twitter on mobile devices
- 44% of females, 56% of males
- 42% daily active users

• 85% of SME (small and medium enterprises) use Twitter for product and services promotion

- total number of LinkedIn users: 660 million
- number of monthly active LinkedIn users: 310 million (47%)
- number of new users per second: 2
- 40 million students and recent graduates use LinkedIn
- 43% female, 57% male users
- 90 million users are in senior-level positions
- 63 million users are in decision-making positions
- 17 million opinion leader and 10 million C-level executives



.6/28

- 2 billion monthly active users
- 30 million daily active users
- 38% females, 62% of males
- 62% of businesses use YouTube



social media and cyber-unhappiness



the paradox of choice and the concept of missed opportunity cost

“The Paradox of Choice: Why More is Less?” by Barry SCHWARTZ (2004)

“What does the paradox of choice mean for how I listen to all the songs I have? When I do have the time to hear one of them, often downloaded into my 60Gig iPod, I’m constantly aware, at some level of consciousness, that if I’m not completely satisfied with what I’m hearing, there are a thousand other songs on that iPod I could be listening to right now.”

$$\frac{\text{same (limited) amount of time}}{\text{more possibilities (info-glut + digital shopping mall)}} = \text{shorter attention span}$$

CHANGING EXAM PATTERN

YEAR 1995 : ANSWER ALL QUESTIONS.

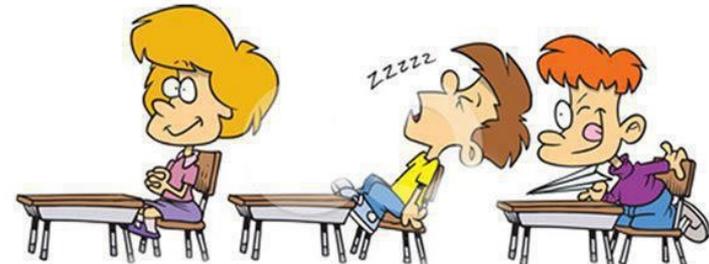
YEAR 2000 : ANSWER ANY 5 QUESTION.

YEAR 2005 : SELECT THE CORRECT ANSWER (A, B OR C).

YEAR 2010 : WRITE EITHER A OR B.

YEAR 2015 : PLEASE ONLY READ THE QUESTIONS.

YEAR 2020 : THANKS FOR COMING !!! :)



2040? - Cyberbabel? by David LOY (2007)

“There will be a road.

It will not connect two
points. It will
connect all points.

It will not go from here to
there.

There will be no there.

We will all only be
here.”

(1994 MCI advertisement)



2060? – human dystopia?



today... global warming



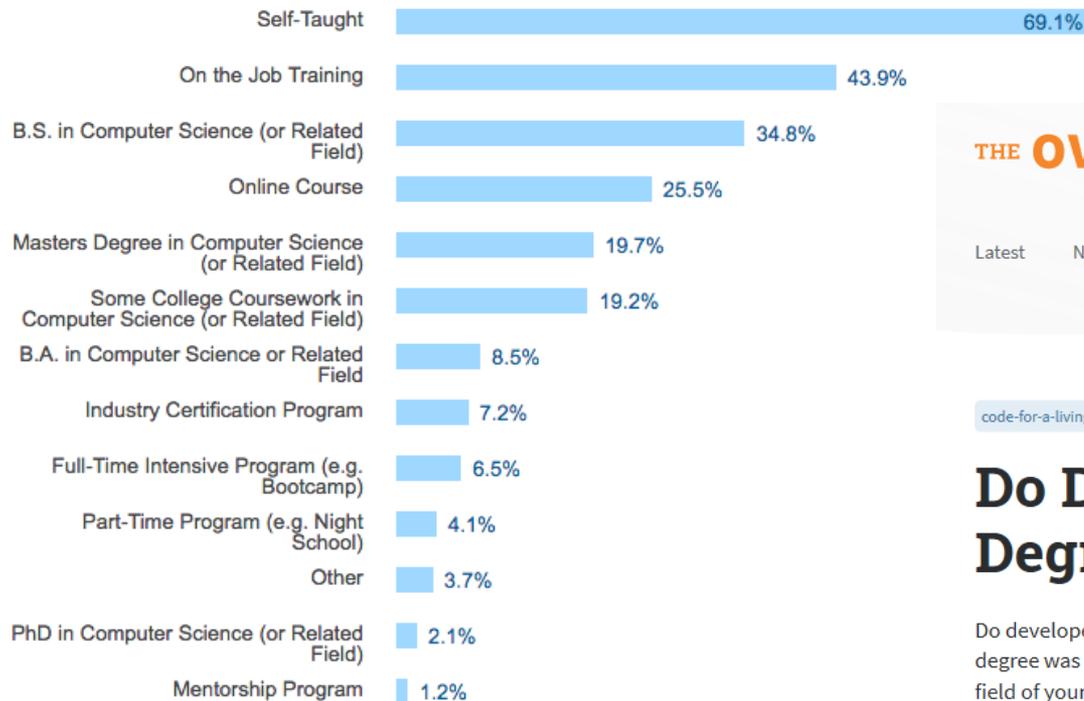
today... slaughterbots



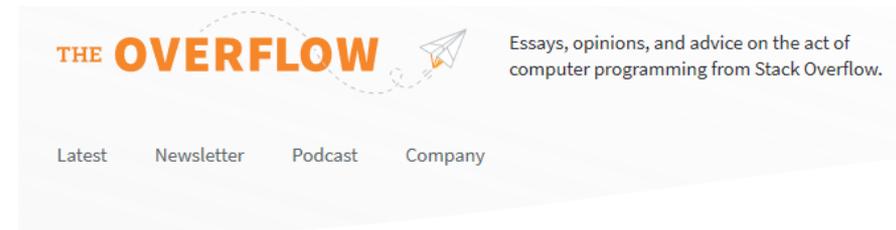
today... e-learning

Our [2016 Developer Survey](#) found that 56% of developers in fact do not have a college degree in computer science or related fields. The most popular way for developers to learn is by “self-teaching” in some way (69% of respondents told us they were at least partially self-taught; 13% said they were *entirely* self-taught).

VIII. Education



40,183 responses from non-student developers



code-for-a-living OCTOBER 7, 2016

Do Developers Need College Degrees?

Do developers need college degrees? Just a generation ago, it was a given that a college degree was the best way to maximize the likelihood of securing a high-paying job in the field of your choice. But the world has changed, and more and more you hear of successful developers who never earned a degree,...



Alyssa Mazzina
Marketing (Former)



morals and morality

morals correspond to one's personal beliefs about right or wrong

morality (from the Latin *moralitas* "manner, character, proper behavior") has three principal meanings.

1. in its first descriptive usage, morality means a code of conduct held to be authoritative in matters of right and wrong. Morals are created by and define society, philosophy, religion, or individual conscience.
2. in its second, normative and universal sense, morality refers to an ideal code of conduct, one which would be espoused in preference to alternatives by all rational people, under specified conditions.
3. in its third usage, 'morality' is synonymous with ethics, **the systematic philosophical study of the moral domain.**

ethics

ethics is a major branch of philosophy, encompassing right conduct and good life. It is significantly broader than the common conception of analyzing right and wrong. A central aspect of ethics is "the good life", **the life worth living or life that is simply not only satisfying**, which is held by many philosophers to be more important than moral conduct.

ethics describes standard codes of behavior expected of an individual by a group (nation, organization or profession) to which an individual belongs

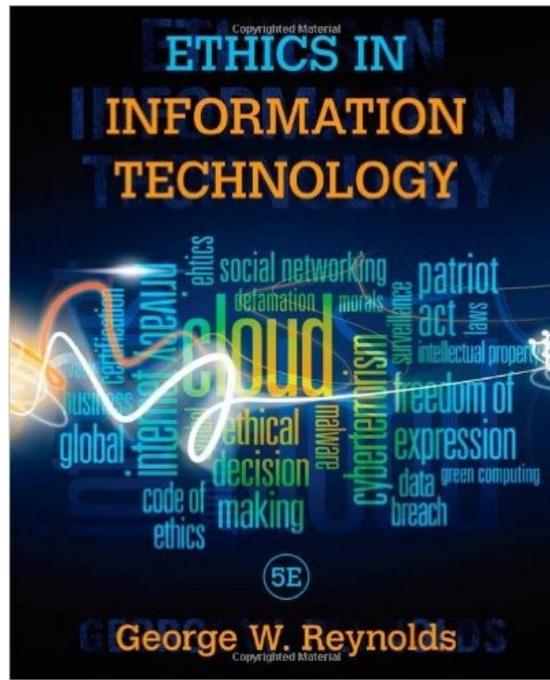
laws and moral acts

laws are a system of rules that tells us what we can and cannot do. Laws are enforced by a set of institutions (the police, courts, law-making bodies). Legal acts are acts that conform to the law.

moral acts conform to what an individual believes to be the right thing to do. Laws can proclaim an act as legal, although many people may consider the act immoral.

e.g. abortion, euthanasia...

references



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images

