The 21ˢᵗ Century Architect
Digitally Augmented, but very Human

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W−B
WOODS BAGOT

Why do we use technology in design?

Who does technology serve?
Who benefits the most?

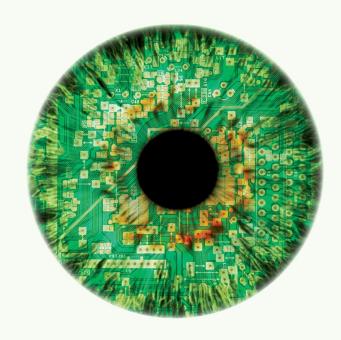Is our use of technology aligned to our values, and the values of our profession?

With technology, are we acting in the best interest of humanity?

"Let us consider an augmented architect at work"

"Next he begins a functional analysis. He has a list of the people who will occupy this building, and the daily sequences of their activities. The "clerk" allows him to follow each in turn, examining how doors swing, where special lighting might be needed. Finally he has the "clerk" combine all of these sequences of activity to indicate spots where traffic is heavy in the building, or where congestion might occur, and to determine what the severest drain on the utilities is likely to be."

"...the computer has many other capabilities for manipulating and displaying information that can be of significant benefit to the human in nonmathematical processes of planning, organizing, studying, etc."

Doug Engelbart, "Augmenting Human Intellect: A Conceptual Framework"

RICHARD DANIEL
SUSSKIND SUSSKIND

THE FUTURE OF THE PROFESSIONS

HOW TECHNOLOGY WILL TRANSFORM
THE WORK OF HUMAN EXPERTS

"If knowledge is indeed at the heart of the professions, two questions follow.

The first is this—how effective are the professions at producing, capturing, nurturing, and reusing their knowledge within their own organizations?

The second question... might there be different and better ways of producing knowledge and making it available in society, methods that might not directly involve the traditional professions at all?"

"The successful companies of the second machine age will be those that bring together minds and machines, products and platforms, and the core and crowd very differently than most do today."

Andrew McAfee, Erik Brynjolfsson, "Machine, Platform, Crowd"

"... in the age of orality, ==mastery of what we now regard as individual areas of expertise would be given only to a few==— senior elders of communities, of almost mystical status, who attained these positions precisely because of their ability to draw easily upon their recollections of past experiences, and from insights passed along from previous generations; insights that they too would have handed to their successors."
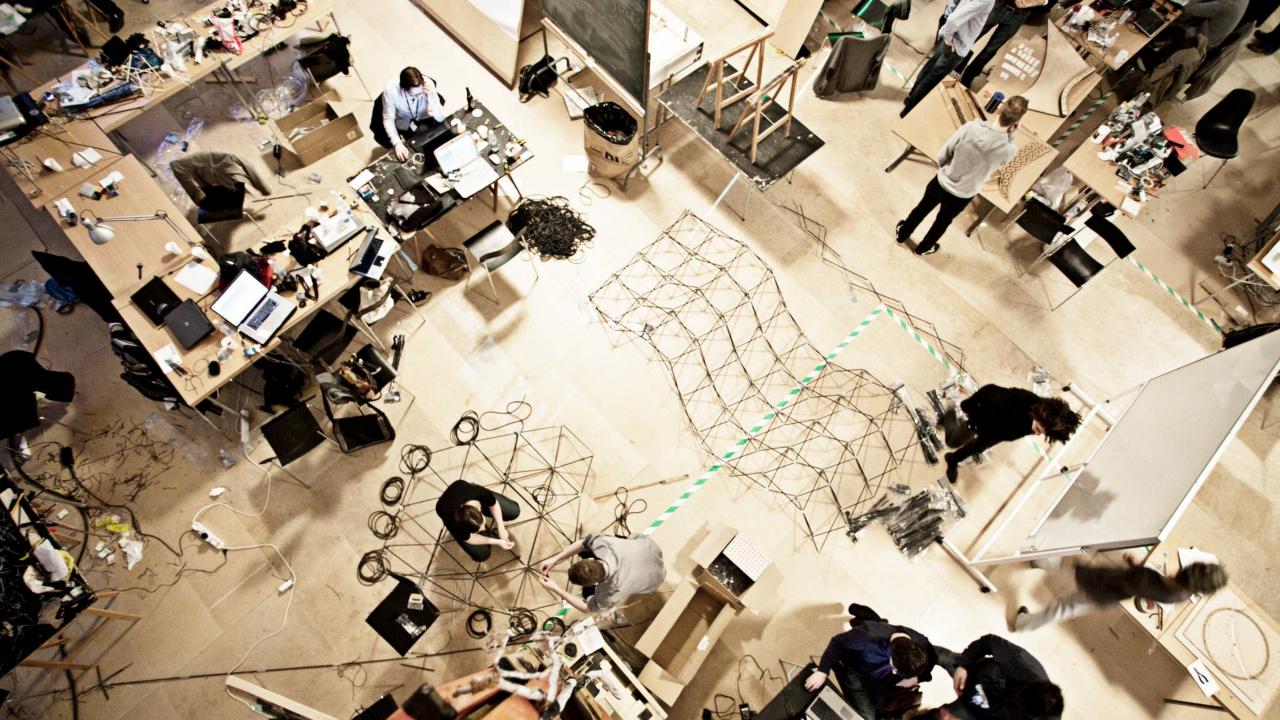
Richard Susskind, Daniel Susskind, "The Future of the Professions"

"The Susskinds say that "successful professionals of tomorrow will need to embrace new methods of communicating."

At the moment, many in the architecture industry are not prepared, partly because these channels have arisen so quickly and partly because the old channels have become so instinctive after years of mastery. This provides opportunities for the next generation, a generation that is likely as adept at communicating in these new mediums as the older generation was at communicating through drawings, books, and presentations."

Daniel Davis in his review of "The Future of the Professions"

Building a **network culture**

Hierarchical vs Heterarchical
Centralized vs Emergent

DesignOps

Elevating the concepts of project-level computation up to push organization-level systemic change

Building your own tools
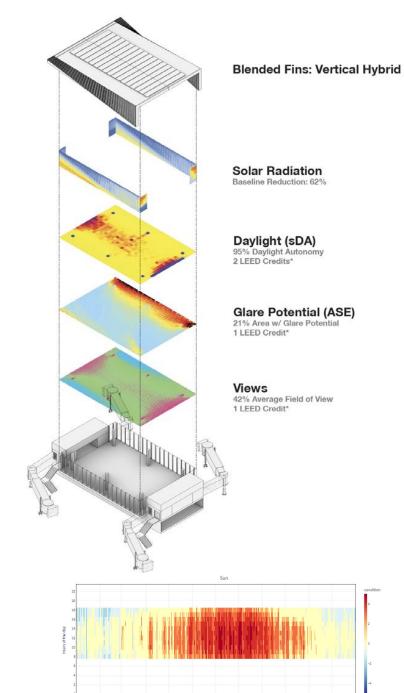The right/wrong product
Deep context
Ideas synthesis
Systems thinking & workflow integration

Automation
answers for commodity tasks

Augmentation
an informed design space for exploration

Blended Fins: Vertical Hybrid

Solar Radiation
Baseline Reduction: 62%

Daylight (sDA)
95% Daylight Autonomy
2 LEED Credits*

Glare Potential (ASE)
21% Area w/ Glare Potential
1 LEED Credit*

Views
42% Average Field of View
1 LEED Credit*

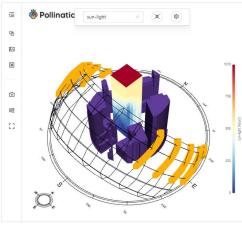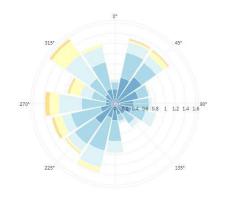☀ **Facade Shading** New York J F Kennedy Intl Ar

On this tab, study the areas on the facade hit by the most harmful suns in a year. The app calculates the harmful suns based on the heating degree days and the cooling degree days for the chosen climate. Read here to learn more about degree days. The app has also split these harmful suns in mid-day suns and morning-afternoon suns.

Heating base point   18

Cooling base point   23

Mid-day start hour   10

Mid-day end hour   14

Percentage of harmful suns   100

Sunpath scale   2

Pollinatio   sun-light

GLOBAL **IMPACT**

Who is your audience?

Client

Firm

Staff

HYPAR

TestFit Inc.

BLENDER BIM

SPECKLE

USD

I'm a more than a little ==concerned about AI==, but maybe not in the way you might think.
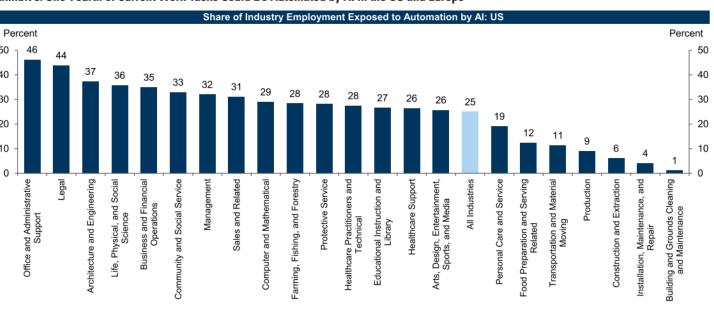
Goldman Sachs Predicts 300 Million Jobs Will Be Lost Or Degraded By Artificial Intelligence

Jack Kelly Senior Contributor ⓘ

I write actionable interview, career and salary advice.

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Mar 31, 2023, 10:48am EDT

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Companies—whether they are McDonald's, introducing self-serve kiosks and firing hourly workers to cut costs, or top-tier investment banks that rely on software instead of traders to make million-dollar bets on the stock market—will continue to implement technology and downsize people to enhance profits. [–] GETTY

Goldman Sachs

Global Economics Analyst

Exhibit 5: One-Fourth of Current Work Tasks Could Be Automated by AI in the US and Europe

Share of Industry Employment Exposed to Automation by AI: US

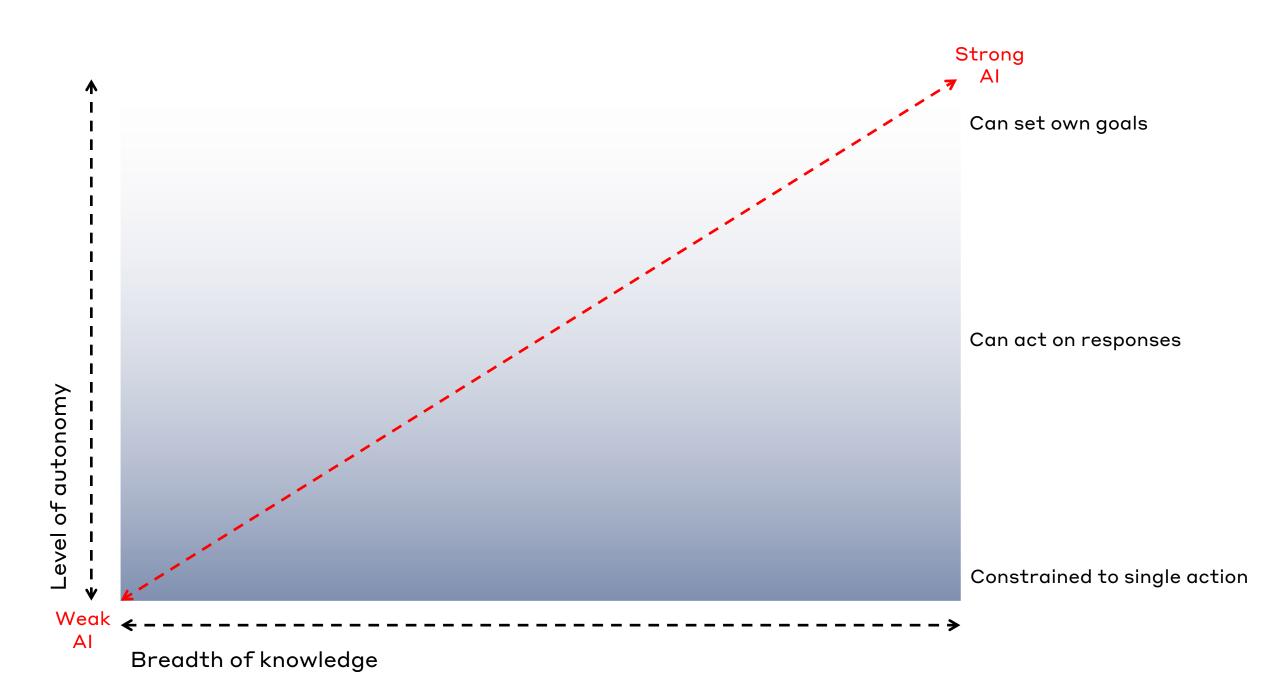| Industry	Percent
Office and Administrative Support	46
Legal	44
Architecture and Engineering	37
Life, Physical, and Social Science	36
Business and Financial Operations	35
Community and Social Service	33
Management	32
Sales and Related	31
Computer and Mathematical	29
Farming, Fishing, and Forestry	28
Protective Service	28
Healthcare Practitioners and Technical	28
Educational Instruction and Library	27
Healthcare Support	26
Arts, Design, Entertainment, Sports, and Media	26
All Industries	25
Personal Care and Service	19
Food Preparation and Serving Related	12
Transportation and Material Moving	11
Production	9
Construction and Extraction	6
Installation, Maintenance, and Repair	4
Building and Grounds Cleaning and Maintenance	1

Intelligence: the ability to learn and perform suitable techniques to solve problems and achieve goals, appropriate to the context in an uncertain, ever-varying world.
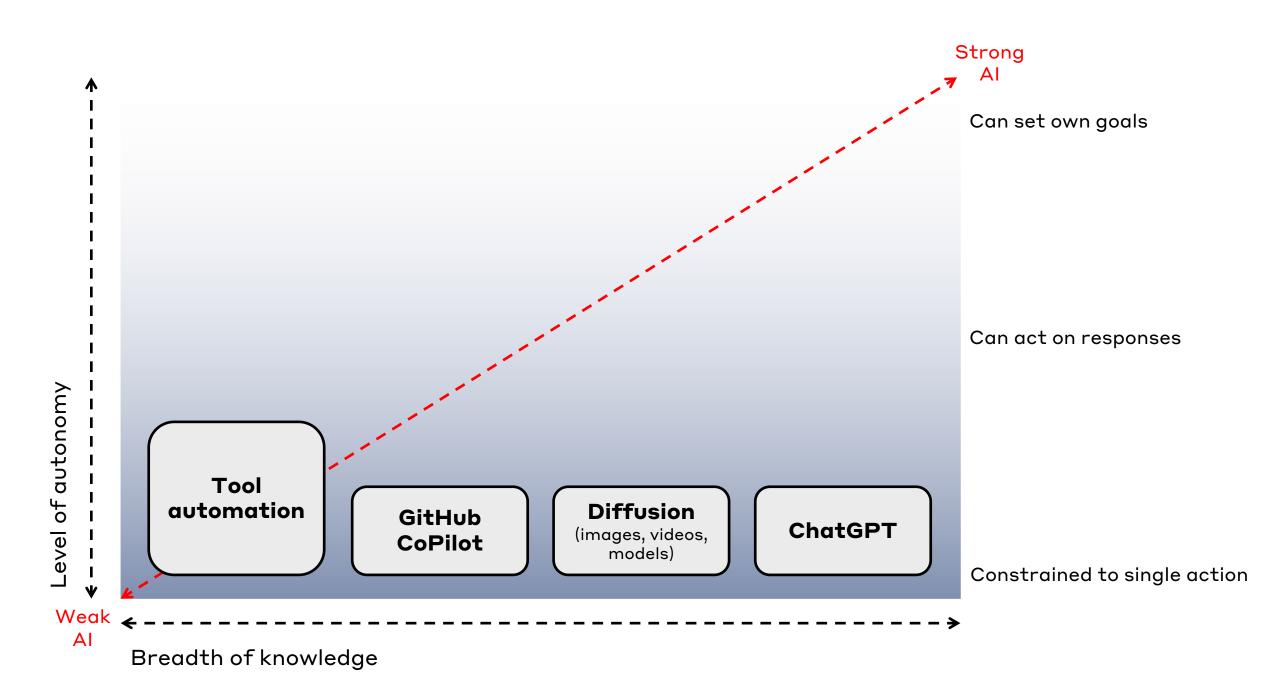
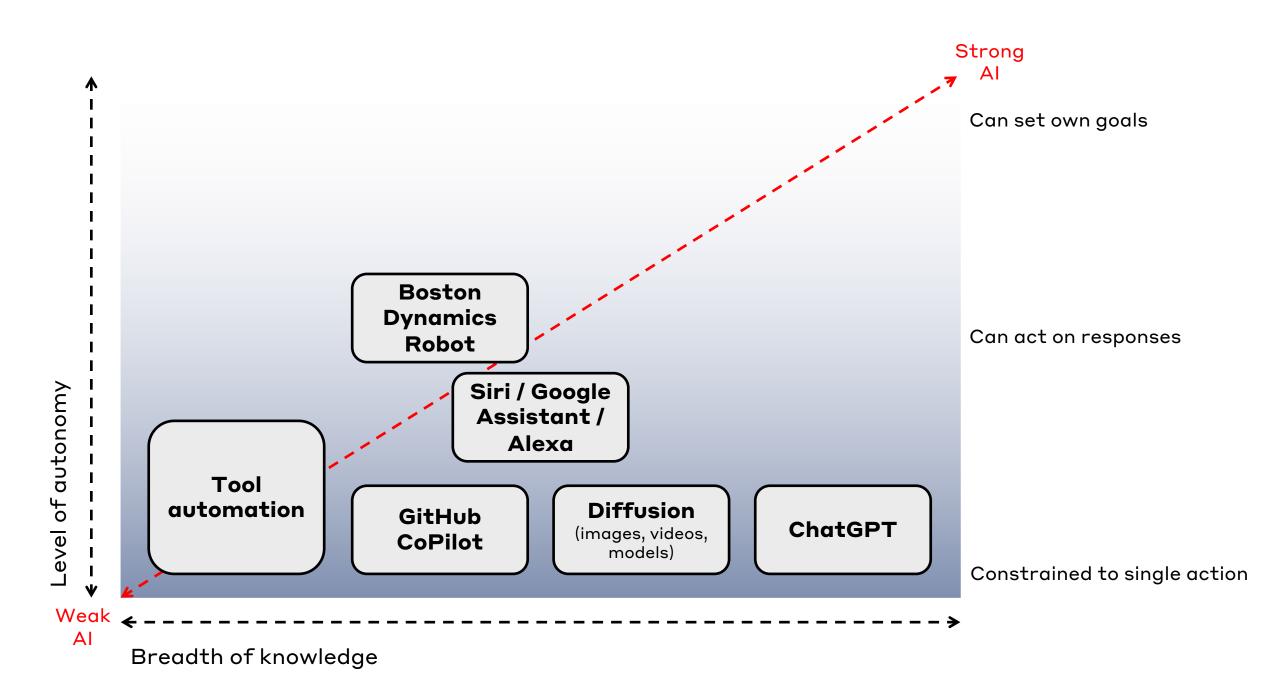**Artificial Intelligence**: the science and engineering of making intelligent machines. They need not be "human-like".

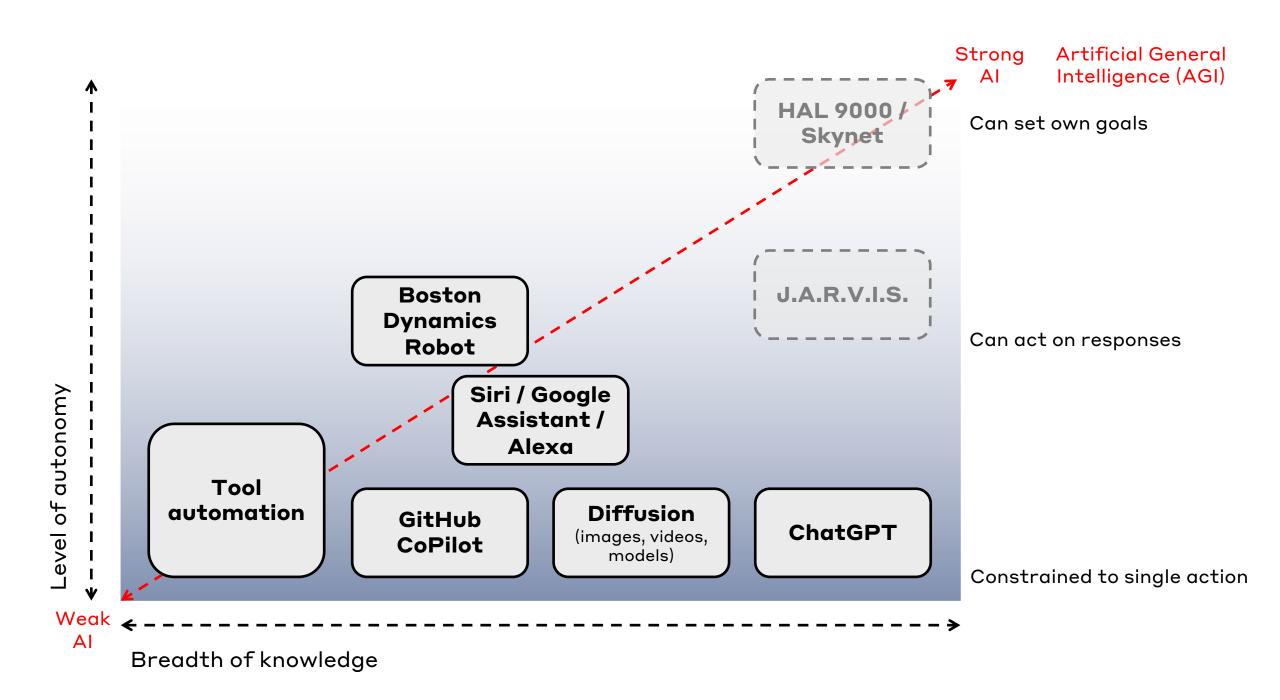**Weak AI**: Intelligence across one or a small number of topics

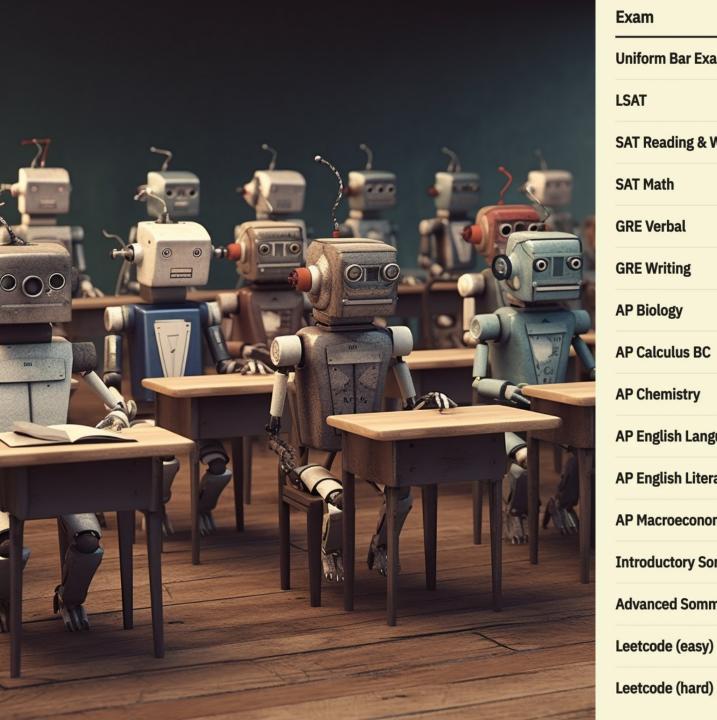**Strong AI / Artificial General Intelligence (AGI)**: Broadly intelligence, context aware, and able to set own goals.

Machine Learning: is the part of AI studying how computer agents can improve their perception, knowledge, thinking, or actions based on experience or data.

Exam	GPT-4	GPT-3.5
Uniform Bar Exam	298/400 (~90th)	213/400 (~10th)
LSAT	163/180 (~88th)	149/180 (~40th)
SAT Reading & Writing	710/800 (~93rd)	670/800 (~87th)
SAT Math	700/800 (~89th)	590/800 (~70th)
GRE Verbal	169/170 (~99th)	154/170 (~63rd)
GRE Writing	4/6 (~54th)	4/6 (~54th)
AP Biology	5/5 (85th-100th)	4/5 (62nd-85th)
AP Calculus BC	4/5 (43rd-59th)	1/5 (0th-7th)
AP Chemistry	4/5 (71st-88th)	2/5 (22nd-46th)
AP English Language and Composition	2/5 (14th-44th)	2/5 (14th-44th)
AP English Literature and Composition	2/5 (8th-22nd)	2/5 (8th-22nd)
AP Macroeconomics	5/5 (84th-100th)	2/5 (33rd-48th)
Introductory Sommelier	92%	80%
Advanced Sommelier	77%	46%
Leetcode (easy)	31/41	12/41
Leetcode (hard)	3/45	0/45

"...the human mind is a surprisingly efficient and even elegant system that operates with small amounts of information; it seeks not to infer brute correlations among data points but to create explanations. "

"...such programs are stuck in a prehuman or nonhuman phase of cognitive evolution. Their deepest flaw is the absence of the most critical capacity of any intelligence: to say not only what is the case, what was the case and what will be the case — that's description and prediction — but also what is not the case and what could and could not be the case. Those are the ingredients of explanation, the mark of true intelligence."

Noam Chomsky, "The False Promise of ChatGPT"

Creativity

Combinational
Creativity

Exploratory
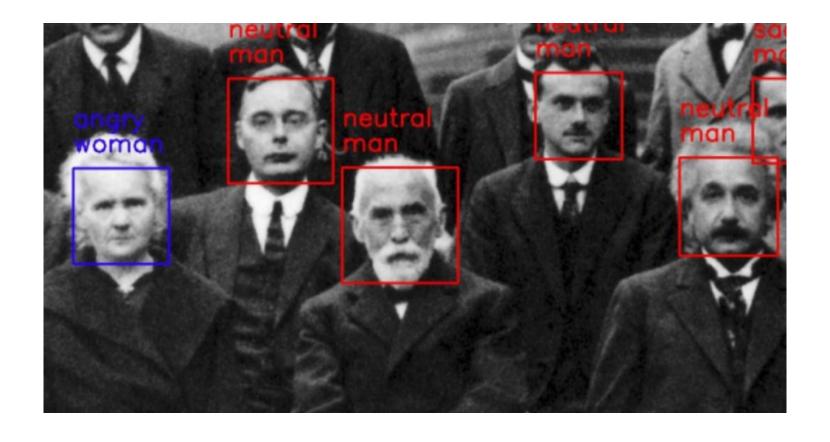Creativity

Transformational
Creativity

?

"An architecture dependent on AI will produce content of the lowest common denominator. Architecture, for better or for worse, has always offered commentary on what the future of the built environment should look like. It provides a service to the world. AI does not exist in the spatial realm perceived by ears, noses, hands, mouths, and eyes. It cannot spatially understand a site or its context; it cannot understand the history and politics of building because these are value judgments requiring human critical acumen. All it can do is look at what's on the Internet and spit out images and D-tier text. That's not the future of architecture. If anything, it's the death of everything that makes architecture interesting."

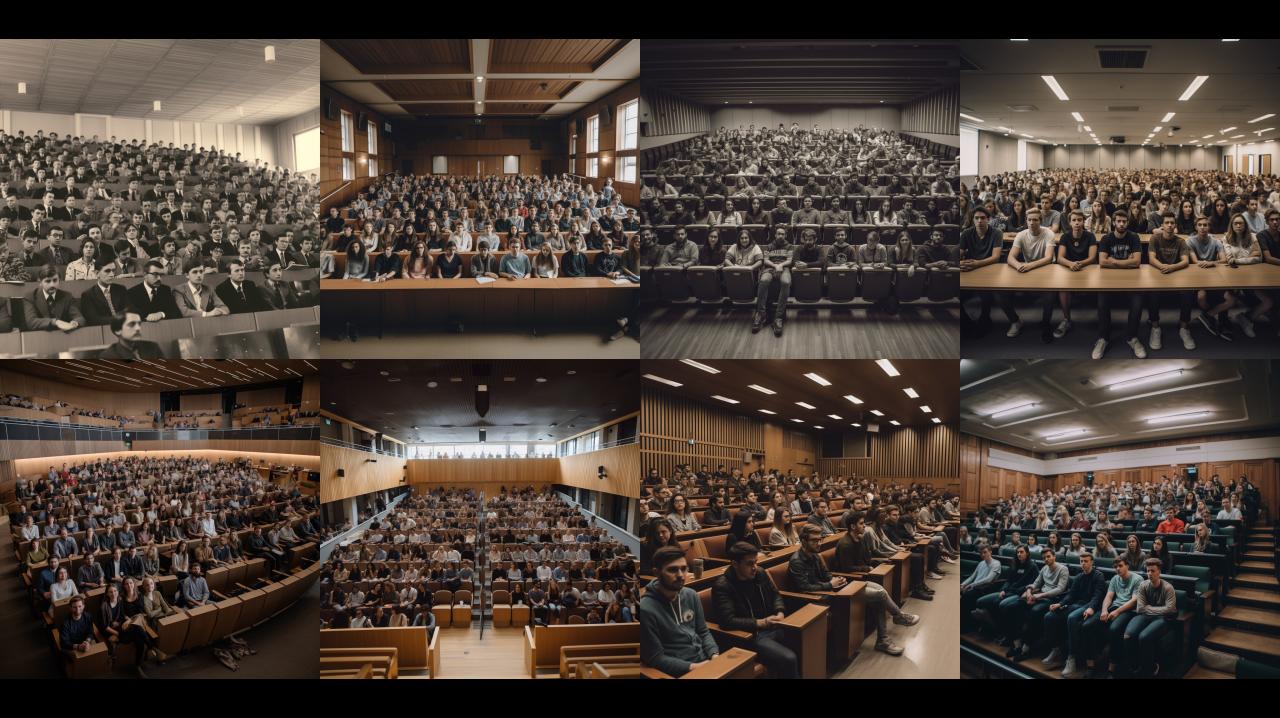**Kate Wagner**, "No, AI Is Not 'Disrupting' Architecture"

"We can easily forget that the classifications that are casually chosen to shape a technical system can play a dynamic role in ==shaping the social and material world==."

Kate Crawford, "Atlas of AI"

"...creativity does not happen inside people's heads, but in the interaction between a person's thoughts and a sociocultural context. It is a systemic rather than an individual phenomenon."
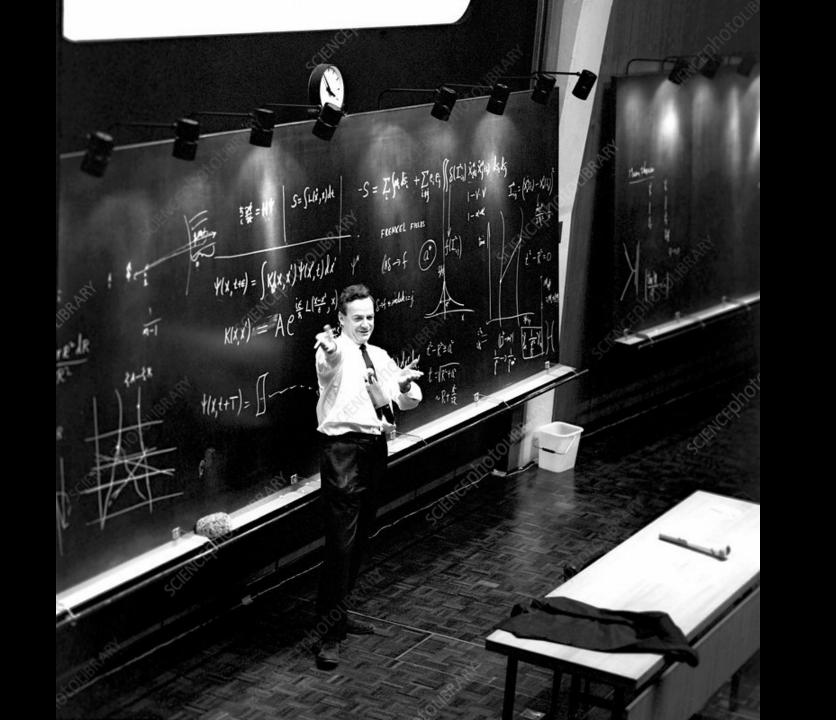
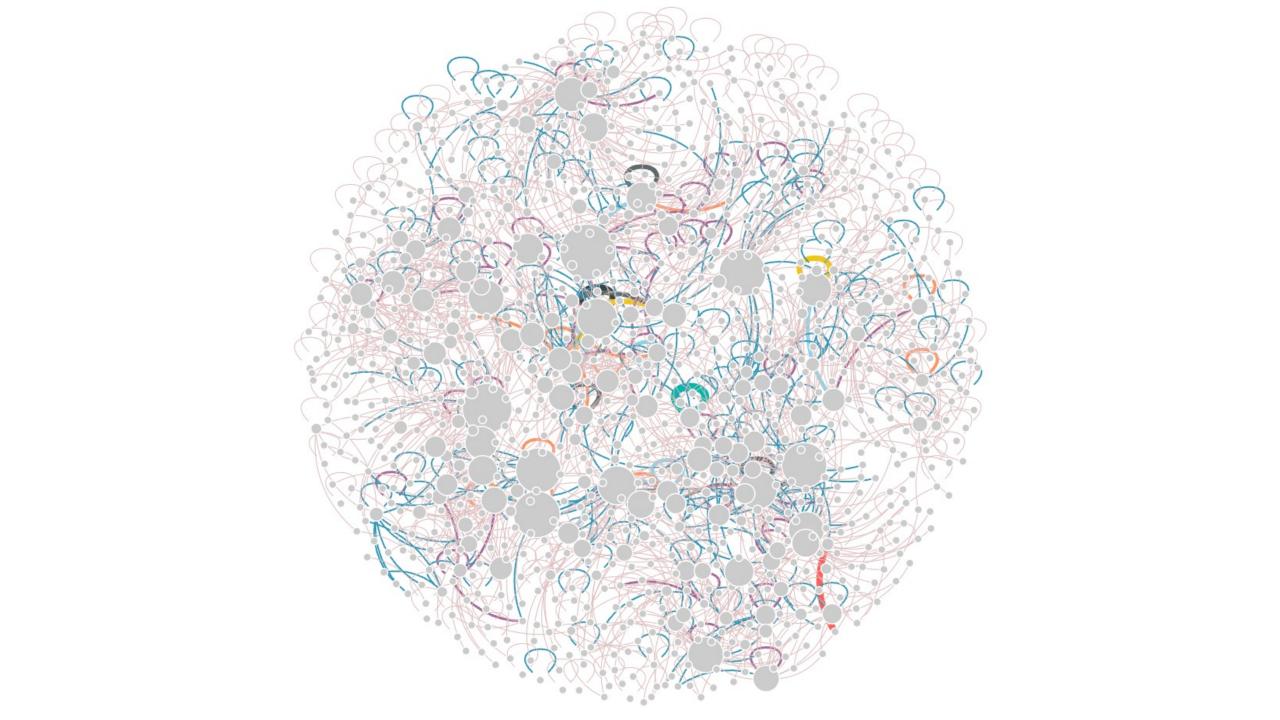**Mihaly Csikszentmihalyi**, "Creativity"
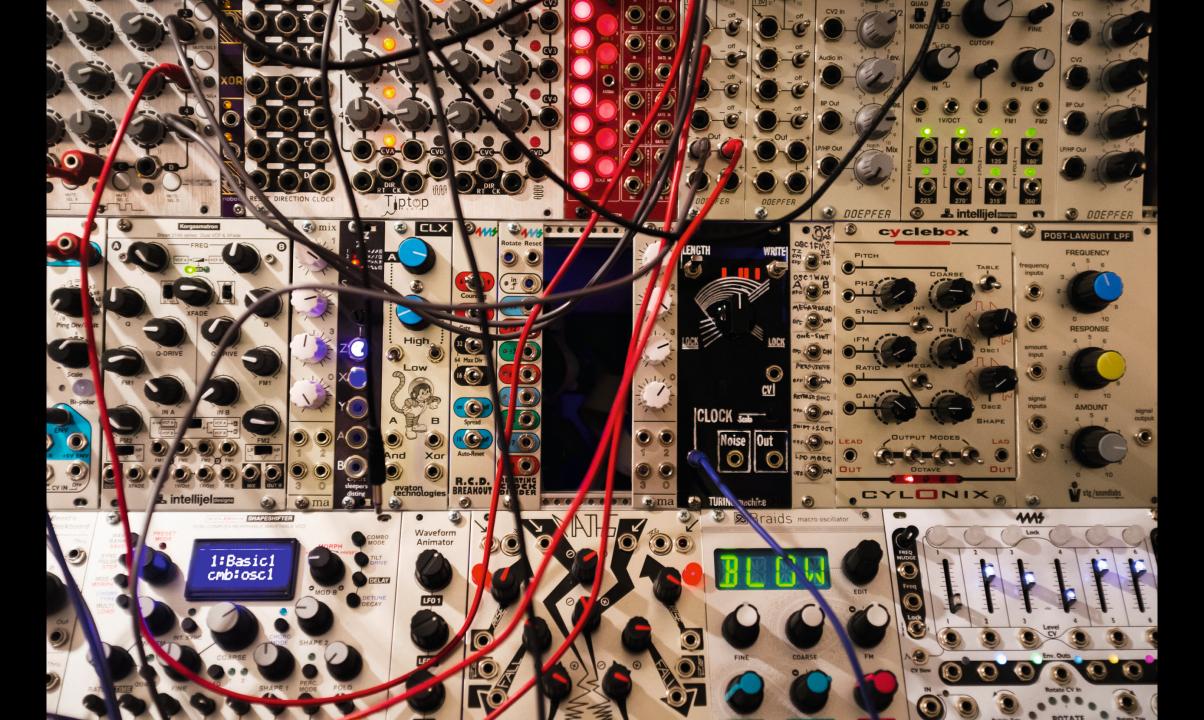
Tools / Mediums for Thought

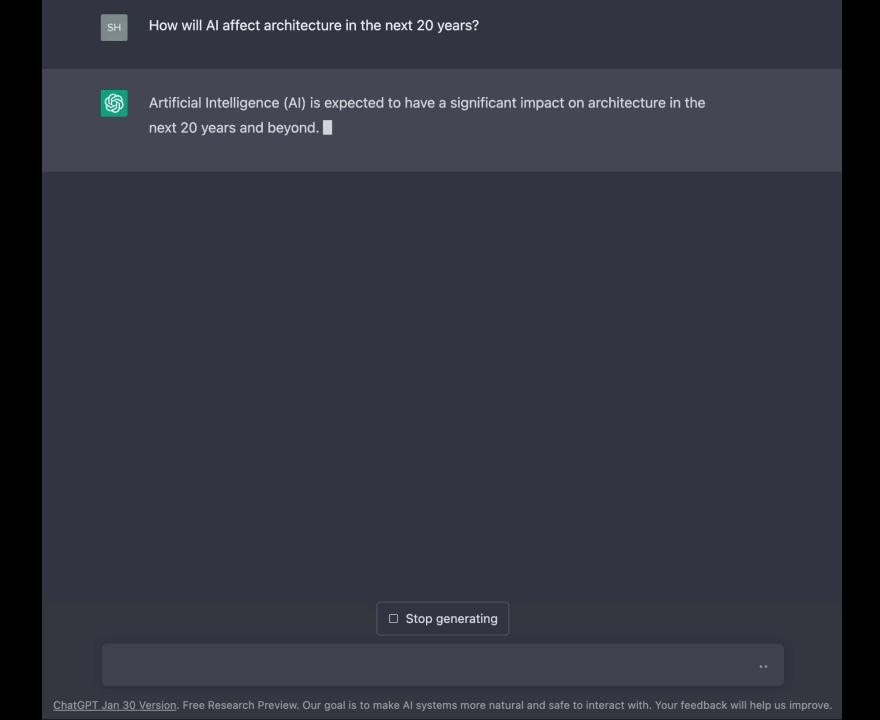by way of Howard Rheingold / Alan Kay

"Such a medium creates a powerful immersive context, a context in which the user can have new kinds of thought, thoughts that were formerly impossible for them - the medium expands the possible range of human thought."
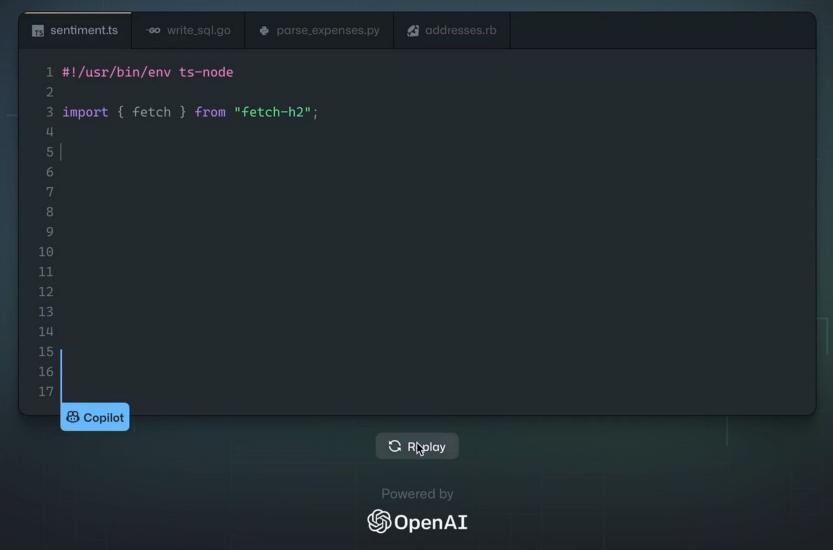
Andy Matuschak & Michael Nielsen, "How can we develop transformative tools for thought?"

SH How will AI affect architecture in the next 20 years?

Artificial Intelligence (AI) is expected to have a significant impact on architecture in the next 20 years and beyond.

☐ Stop generating

. Free Research Preview. Our goal is to make AI systems more natural and safe to interact with. Your feedback will help us improve.

NC How many drinking fountains are required if I only have an occupant load of 10?

No drinking fountains are required if you have an occupant load of 10, as drinking fountains are not required for occupant loads of 15 or fewer.

NY PC 410.2 Small occupanc...   NY BC 2902.6 Small Occupa...   N

NY PC 410.2 Small Occupancies ('10)

Drinking fountains shall not be required for an occupant load of 15 or fewer.

I have a parking lot with 200 spaces. How many van accessible spaces do I need?

Human(s) + AI partnerships
Us as generalized intelligence
AI as specialized intelligence

Empathy

the capacity to understand or feel what another person is experiencing from within their frame of reference, that is, the capacity to place oneself in another's position.