Instructional Designers in an AI Enterprise

How to bring your skills into the emerging blended work of people and algorithms

Ted Smith, PhD

CEO

revonsystems.ai

The Hype

- "We have some catching up to do in the area of machine learning and artificial intelligence." ~**Klaus Froehlich**
- "Artificial Intelligence, deep learning, machine learning—whatever you're doing if you don't understand it—learn it. Because otherwise you're going to be a dinosaur within 3 years." ~**Mark Cuban**
- "Just as electricity transformed almost everything 100 years ago, today I actually have a hard time thinking of an industry that I don't think AI (Artificial Intelligence) will transform in the next several years." ~**Andrew Ng**
- "Artificial Intelligence will be rampant in the digital supply chain" ~**Dave Waters**
- The field of Artificial Intelligence is set to conquer most of the human disciplines; from art and literature to commerce and sociology; from computational biology and decision analysis to games and puzzles." ~**Anand Krish**
- "Machine intelligence is the last invention that humanity will ever need to make." ~**Nick Bostrom**

Poll Question

In what time horizon will AI/Machine Learning become a common consideration of decision making about how a job function should be performed?

A) Never

B) 5 Years from now

C) 10 Years from now

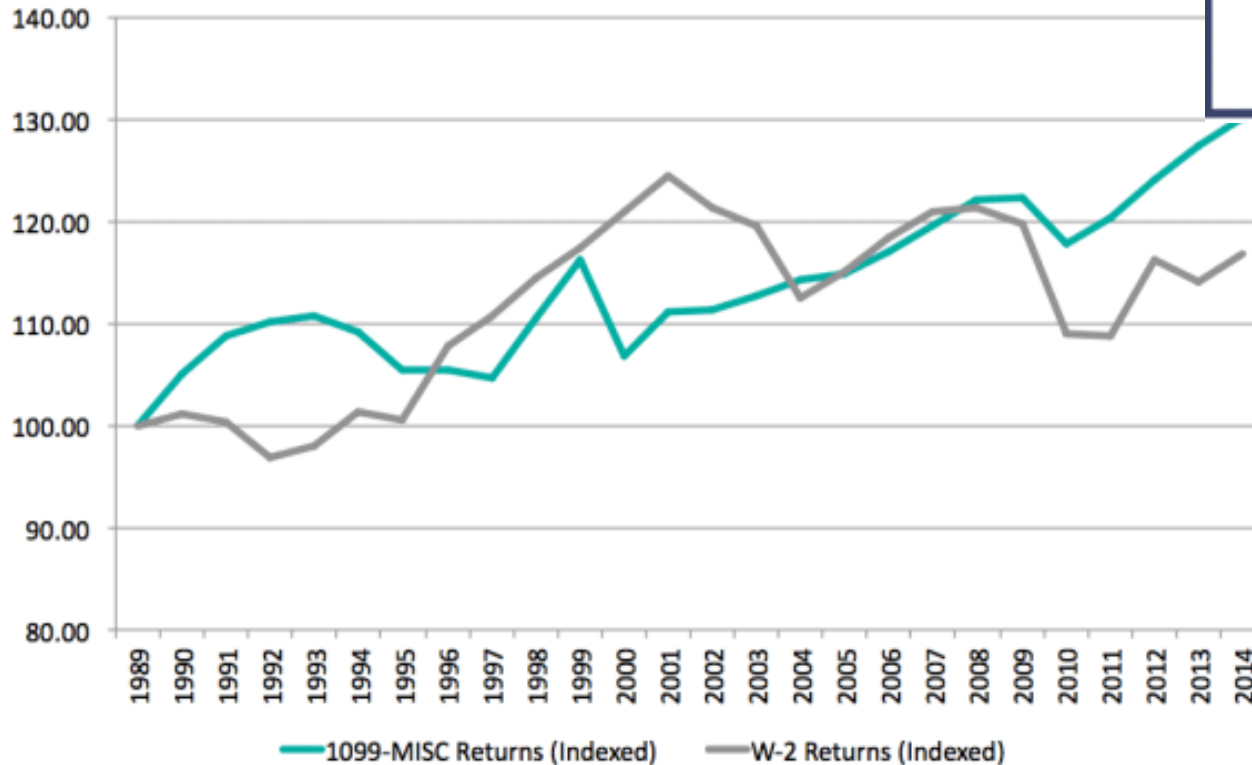D) 20 Years from now

E) >20 Years from now

Historical Importance of Instructional Design and Delivery

- The most important investment made to create a ready workforce in time of great change

- The best way to ensure alignment of human performance and organizational goals

- A gap-closing capability used to create business-capable resources from incomplete new talent

- Others?

Megatrends in Talent

- Outsourcing

What's Being Outsourced Today

Information Technology	55%
Administration	47%
Distribution and Logistics	22%
Finance	20%
Human Resources	19%
Manufacturing	18%
Contact Centers/Call Centers	15%
Sales/Marketing	13%
Real Estate/Facilities Management	11%
Transportation	9%

Source: U.S. Trade Deficit Commission Review

Total Form 1099-MISC and W-2 Returns by Year, Indexed to 1989

1099-MISC Returns (Indexed) — W-2 Returns (Indexed)

*Shaded areas represent recessions as defined by the National Bureau of Economic Research
Source: Internal Revenue Service, Office of Research; Analysis by Bay Area Council Economic Institute

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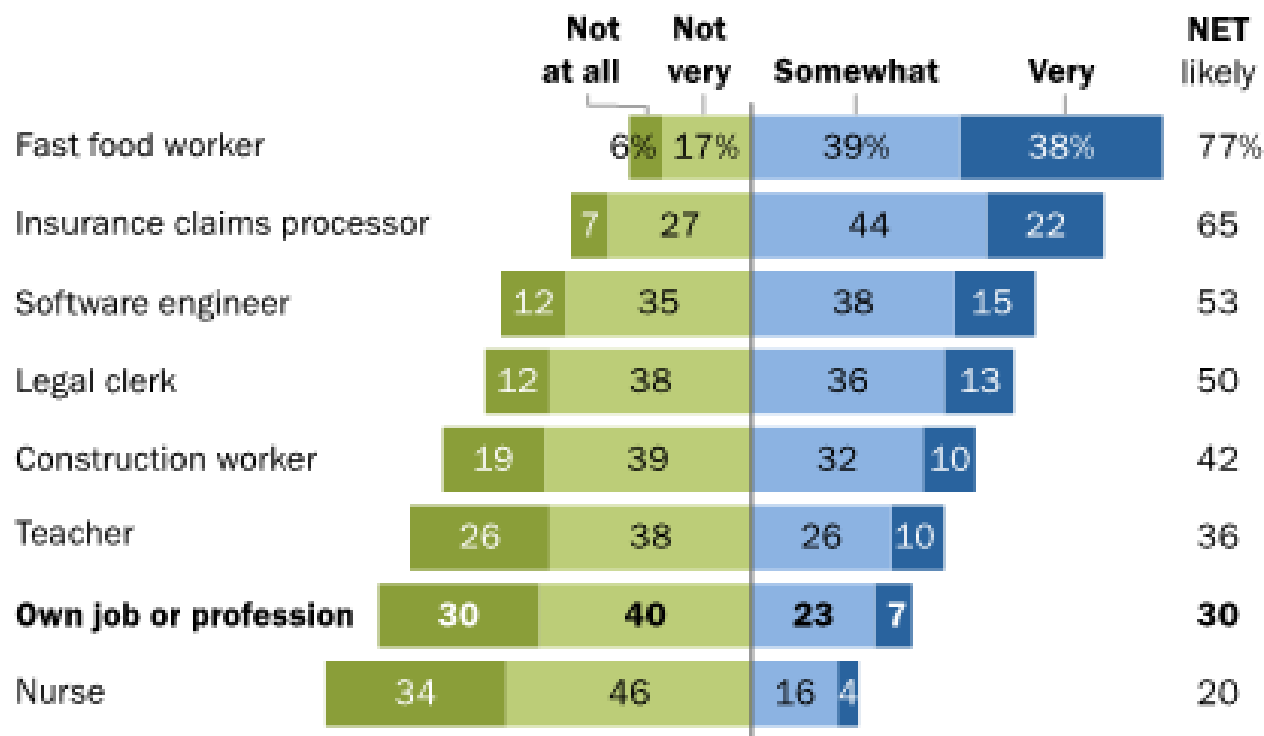
- Automation

Legend:
- Management, Business, and Financial
- Computer, Engineering, and Science
- Education, Legal, Community Service, Arts, and Media
- Healthcare Practitioners and Technical
- Service
- Sales and Related
- Office and Administrative Support
- Farming, Fishing, and Forestry
- Construction and Extraction
- Installation, Maintenance, and Repair
- Production
- Transportation and Material Moving

Low 33% Employment — Medium 19% Employment — High 47% Employment

Y-axis: Employment (0M, 100M, 200M, 300M, 400M)
X-axis: Probability of Computerisation (0, 0.2, 0.4, 0.6, 0.8, 1)
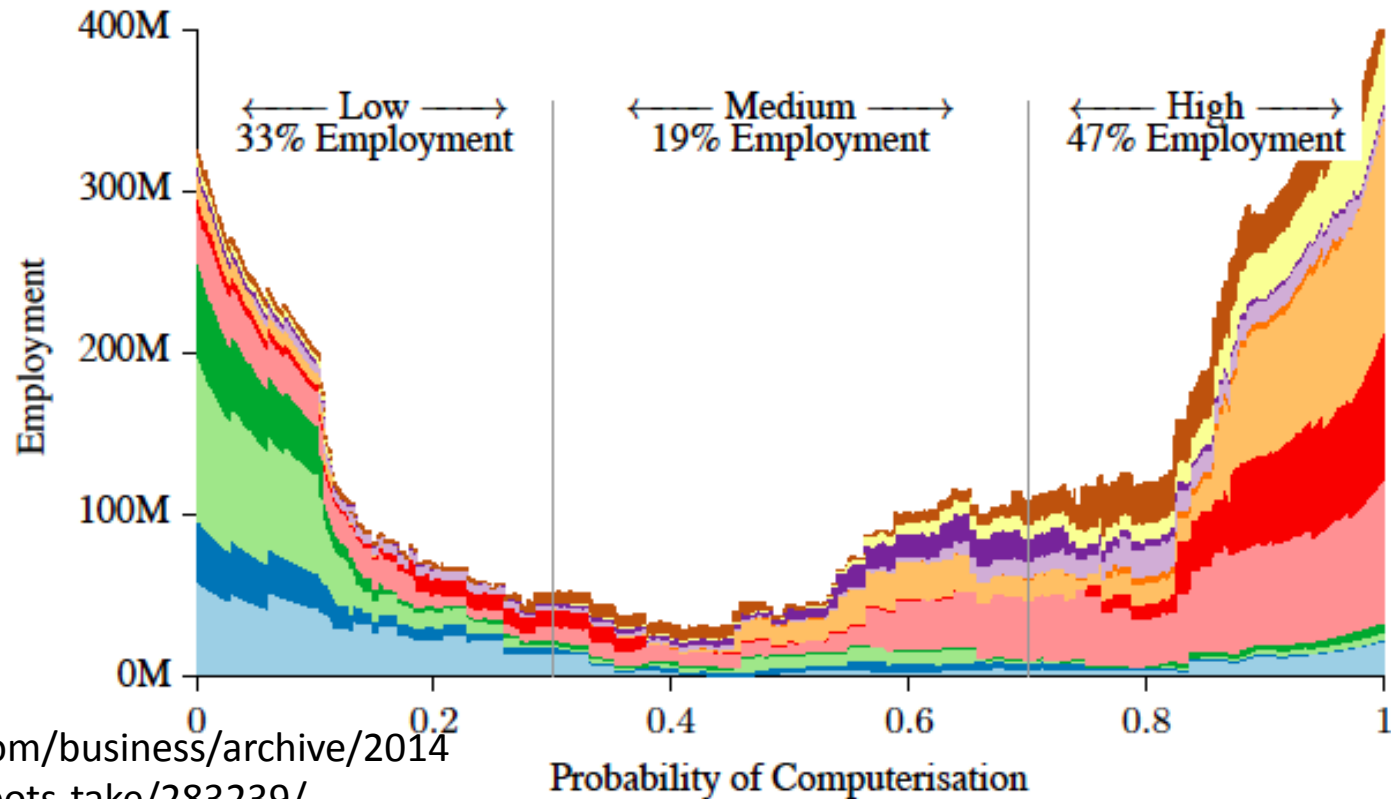
Automation

Americans view certain professions as being at greater risk of automation than others

% of U.S. adults who say it is _____ likely that the following jobs will be replaced by robots or computers in their lifetimes

	Not at all	Not very	Somewhat	Very	NET likely
Fast food worker	6%	17%	39%	38%	77%
Insurance claims processor	7	27	44	22	65
Software engineer	12	35	38	15	53
Legal clerk	12	38	36	13	50
Construction worker	19	39	32	10	42
Teacher	26	38	26	10	36
Own job or profession	**30**	**40**	**23**	**7**	**30**
Nurse	34	46	16	4	20

Note: Data for "own job or profession" is based on those who are currently employed. Respondents who did not give an answer are not shown.
Source: Survey conducted May 1-15, 2017.
"Automation in Everyday Life"

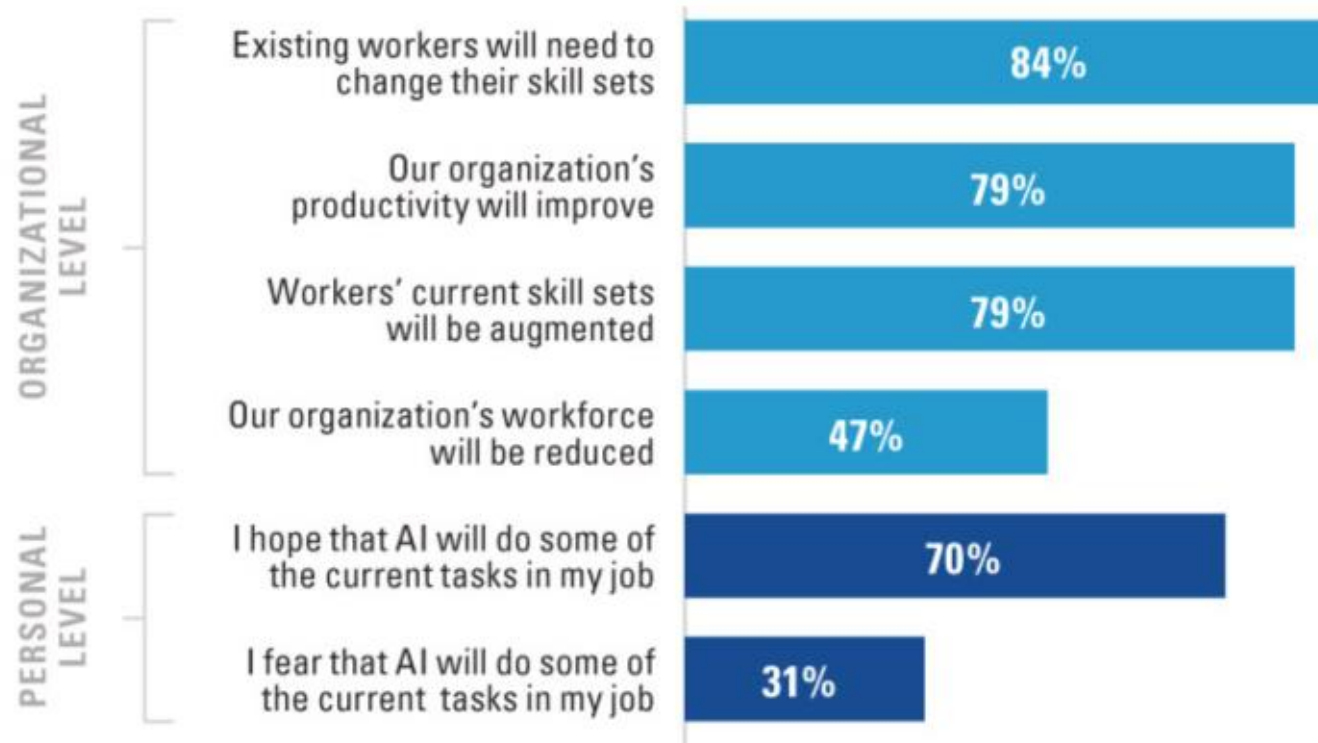**PEW RESEARCH CENTER**

Poll Question

When you think about the kinds of training programs organizations use today, how many of the job functions associated with that training are likely to either be replaced by automation or significantly augmented by automation?

A) No more than we have seen automated to date

B) <20% more of future job functions will be significantly impacted

C) <50% more of future job functions will be significantly impacted

D) >50% more of future job functions will be significantly impacted

AI's effect on the workforce

How do you expect AI will affect the workforce in the next five years?

ORGANIZATIONAL LEVEL

Statement	Percentage
Existing workers will need to change their skill sets	84%
Our organization's productivity will improve	79%
Workers' current skill sets will be augmented	79%
Our organization's workforce will be reduced	47%

PERSONAL LEVEL

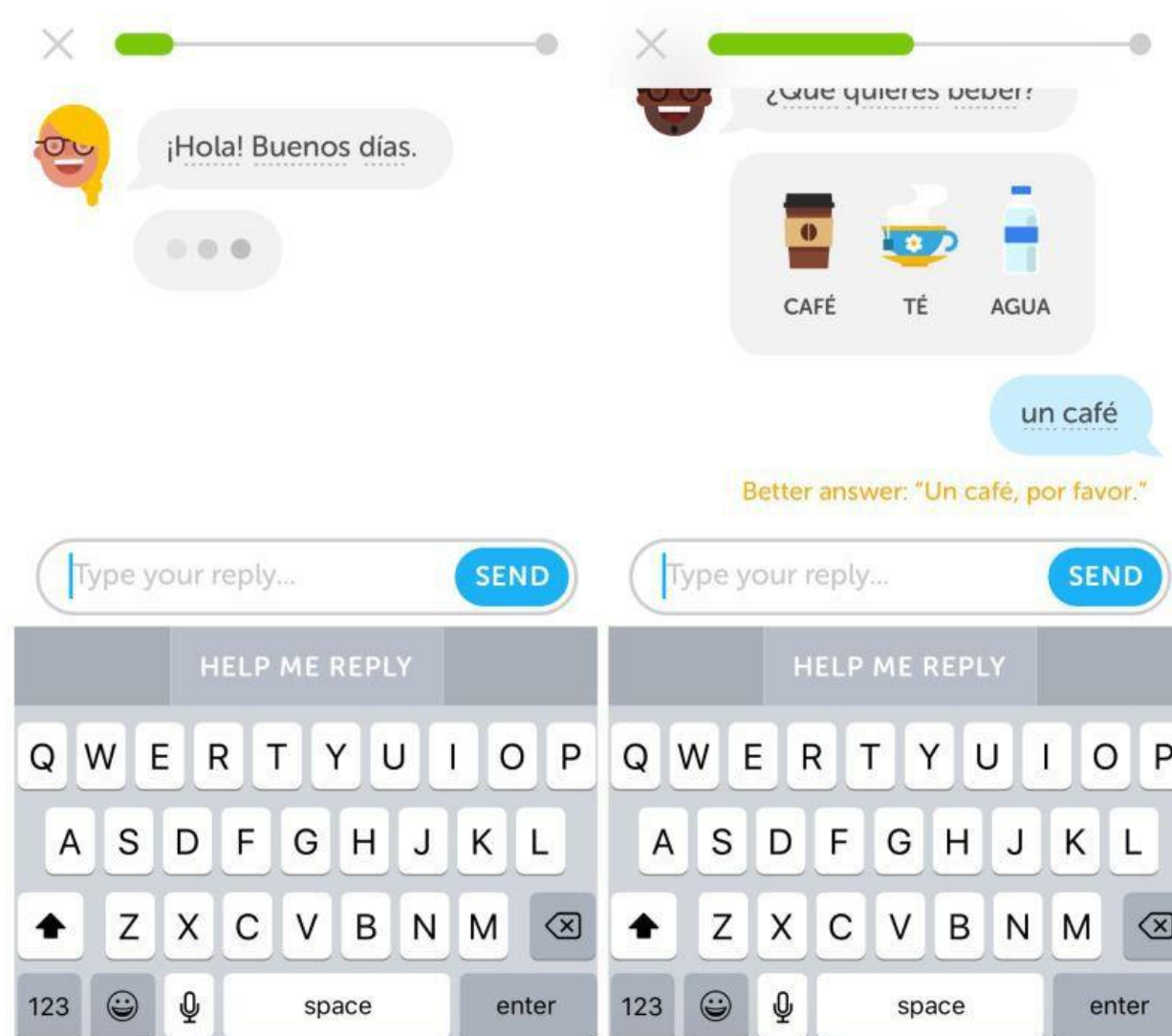| Statement	Percentage
I hope that AI will do some of the current tasks in my job	70%
I fear that AI will do some of the current tasks in my job	31%

Percentage of respondents who somewhat or strongly agree with each statement

https://jobmarketmonitor.com/2017/09/07/the-future-of-work-artificial-intelligence-ai-wont-replace-most-jobs-but-people-using-it-are-starting-to-replace-people-who-dont/
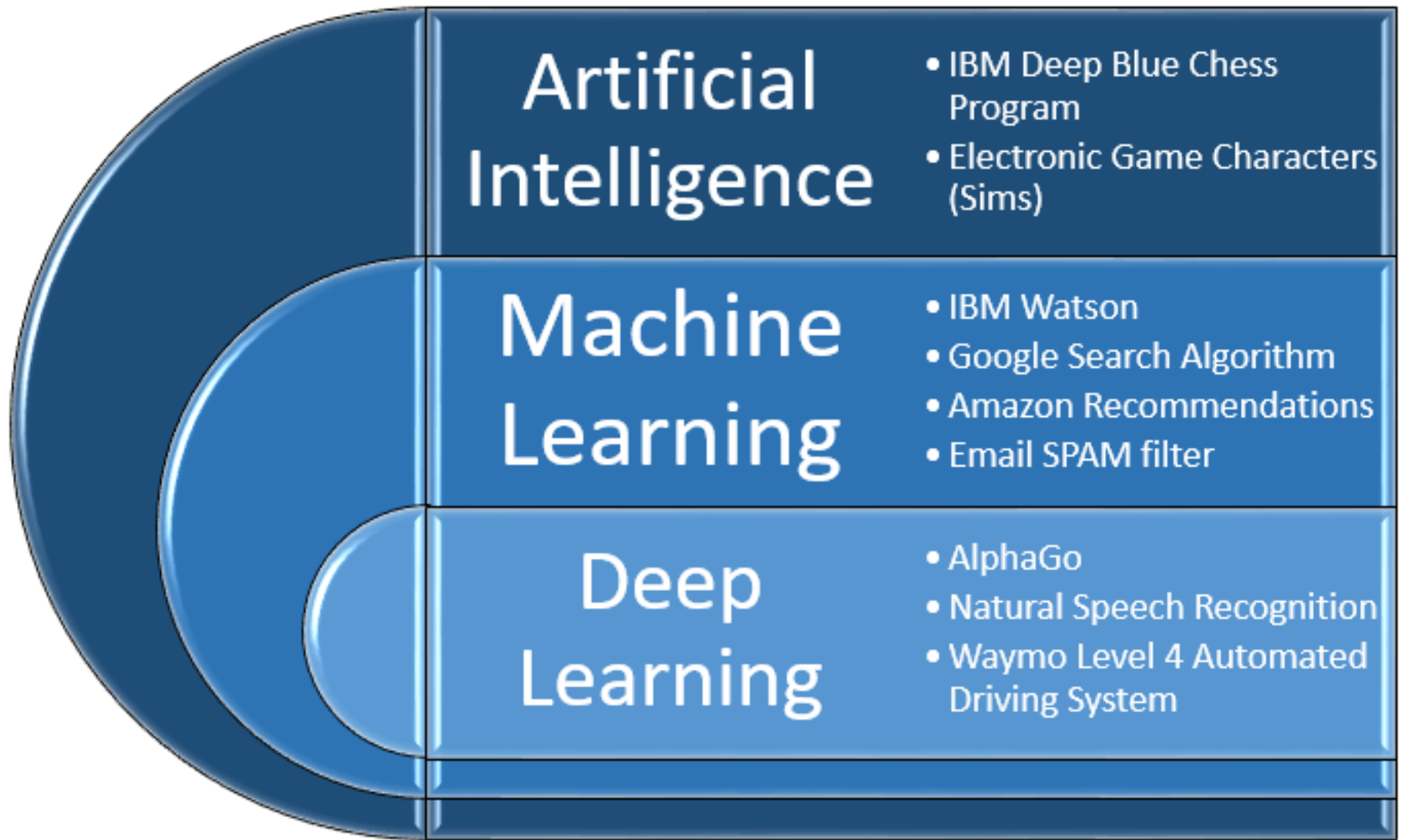
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The Third Wave of Talent Development

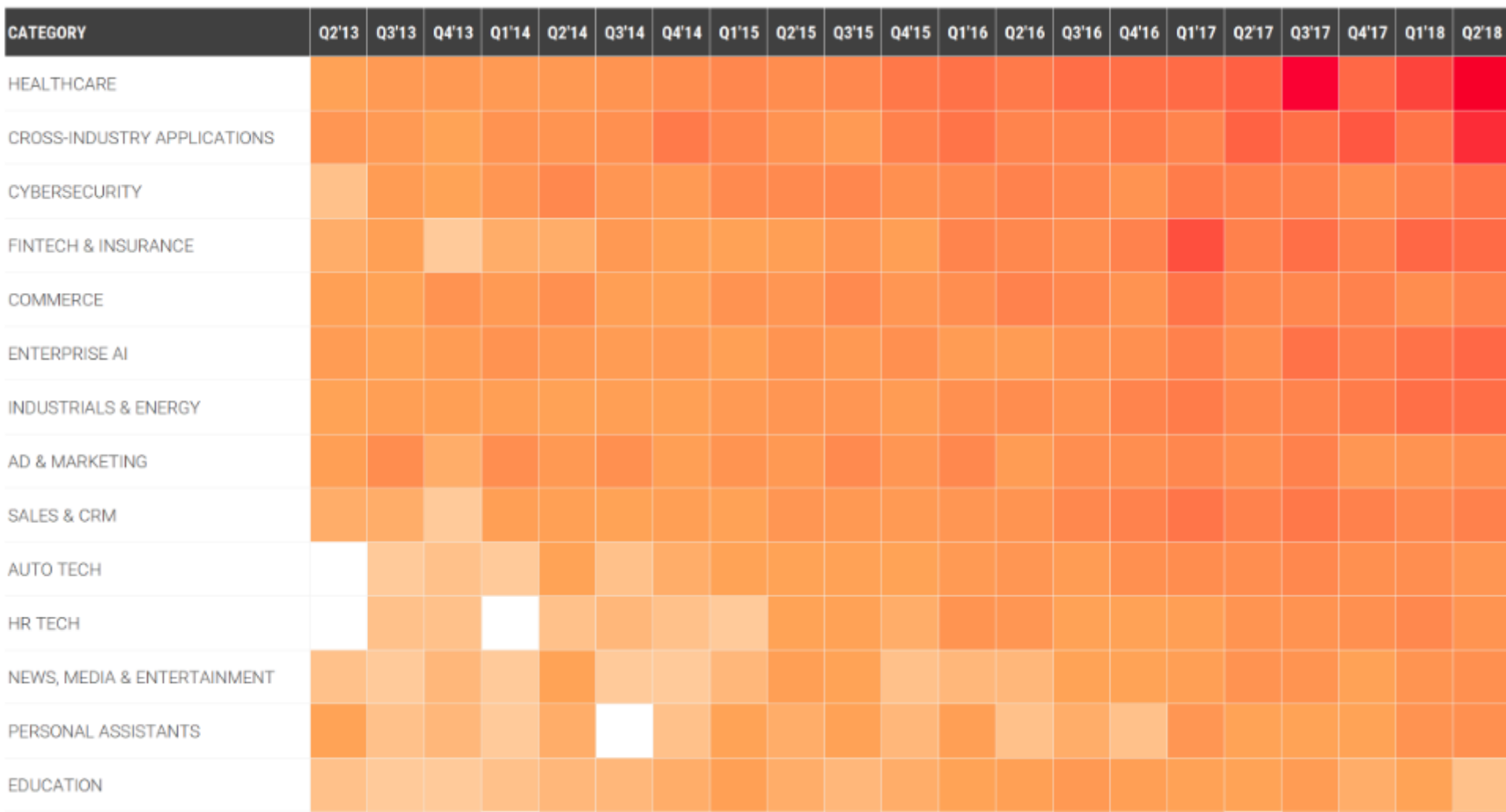- Cognitive substitution and social emulation

A machine that can learn how to interact with humans and other machines and make decisions based on unique circumstances at high levels of performance and negligible incremental cost

Cognitive Computing

Artificial Intelligence	• IBM Deep Blue Chess Program • Electronic Game Characters (Sims)
Machine Learning	• IBM Watson • Google Search Algorithm • Amazon Recommendations • Email SPAM filter
Deep Learning	• AlphaGo • Natural Speech Recognition • Waymo Level 4 Automated Driving System

https://www.cargroup.org/behind-headlines-artificial-intelligence-challenges-using-ai-automotive-industry/ai_machinelearning/

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The Money is Chasing the Dream

CATEGORY	Q2'13	Q3'13	Q4'13	Q1'14	Q2'14	Q3'14	Q4'14	Q1'15	Q2'15	Q3'15	Q4'15	Q1'16	Q2'16	Q3'16	Q4'16	Q1'17	Q2'17	Q3'17	Q4'17	Q1'18	Q2'18
HEALTHCARE																					
CROSS-INDUSTRY APPLICATIONS																					
CYBERSECURITY																					
FINTECH & INSURANCE																					
COMMERCE																					
ENTERPRISE AI																					
INDUSTRIALS & ENERGY																					
AD & MARKETING																					
SALES & CRM																					
AUTO TECH																					
HR TECH																					
NEWS, MEDIA & ENTERTAINMENT																					
PERSONAL ASSISTANTS																					
EDUCATION																					

CB Insights AI Deal Tracker https://www.cbinsights.com/research-artificial-intelligence-startup-deals

Decisions About Talent in the Future

- Can I buy the skills I need or do I need to build them? (who makes this decision?)

- Is there new technological capability that can change the kinds of products and services my organization delivers (who makes this decision?)

- Can this activity be performed by a "agent" that I train to do this work? (who makes this decision?)

Making the AI Decision

Harvard Business Review

LEADERSHIP

Hiring Your First Chief AI Officer

by Andrew Ng

AI. Telemedicine. Quantum. New Novartis Boss Says Tech Will Finally Change The Drug Biz

Matthew Herper Forbes Staff
Pharma & Healthcare
I cover science and medicine, and believe this is biology's century.

children   child
boy   woman
family
hand
arm
joy
surprise
laughter

Companies are suddenly declaring themselves "AI first." Why it's a problem for their current customers.

Examples of software trained to do a human job

Examples of software trained to do a human job
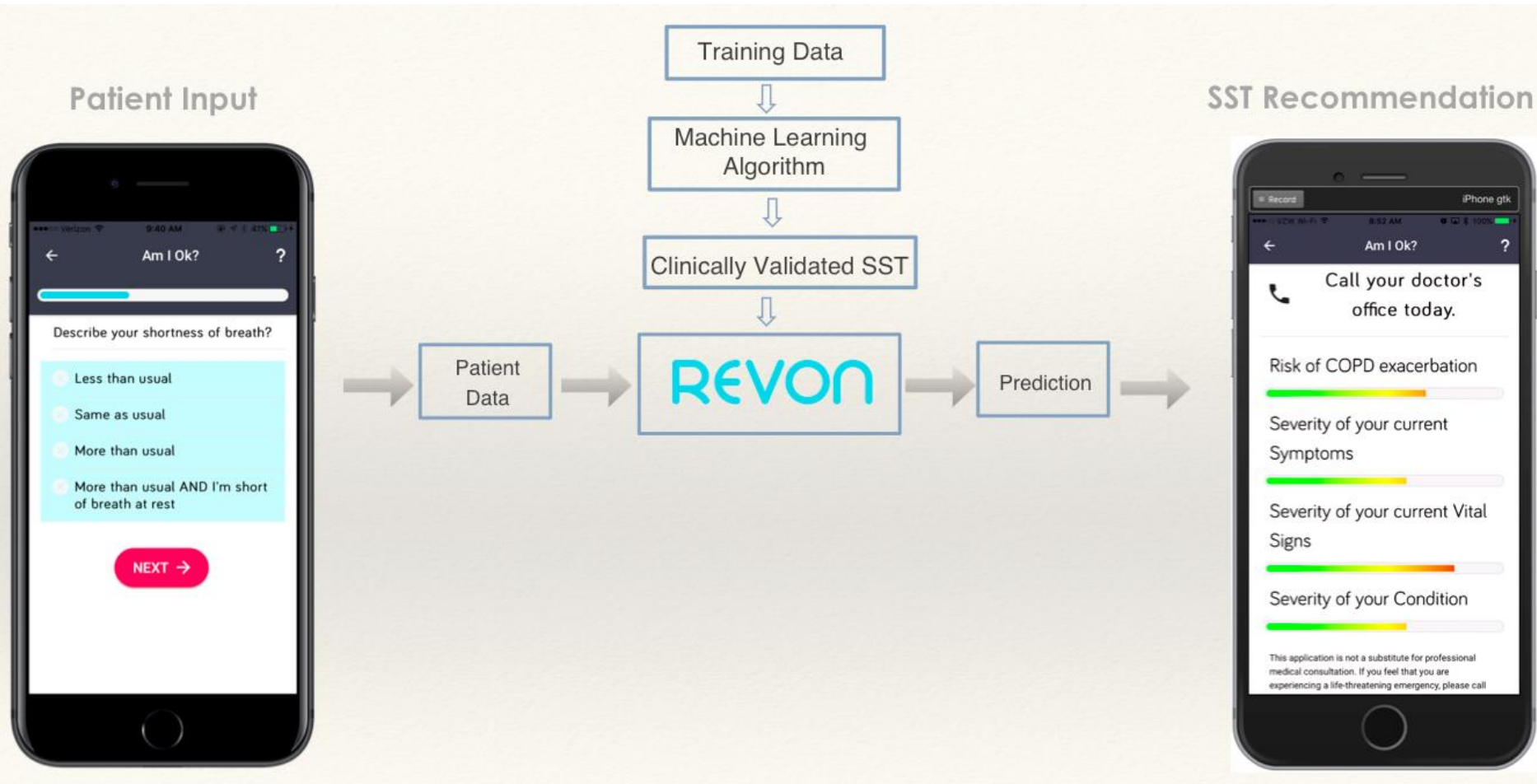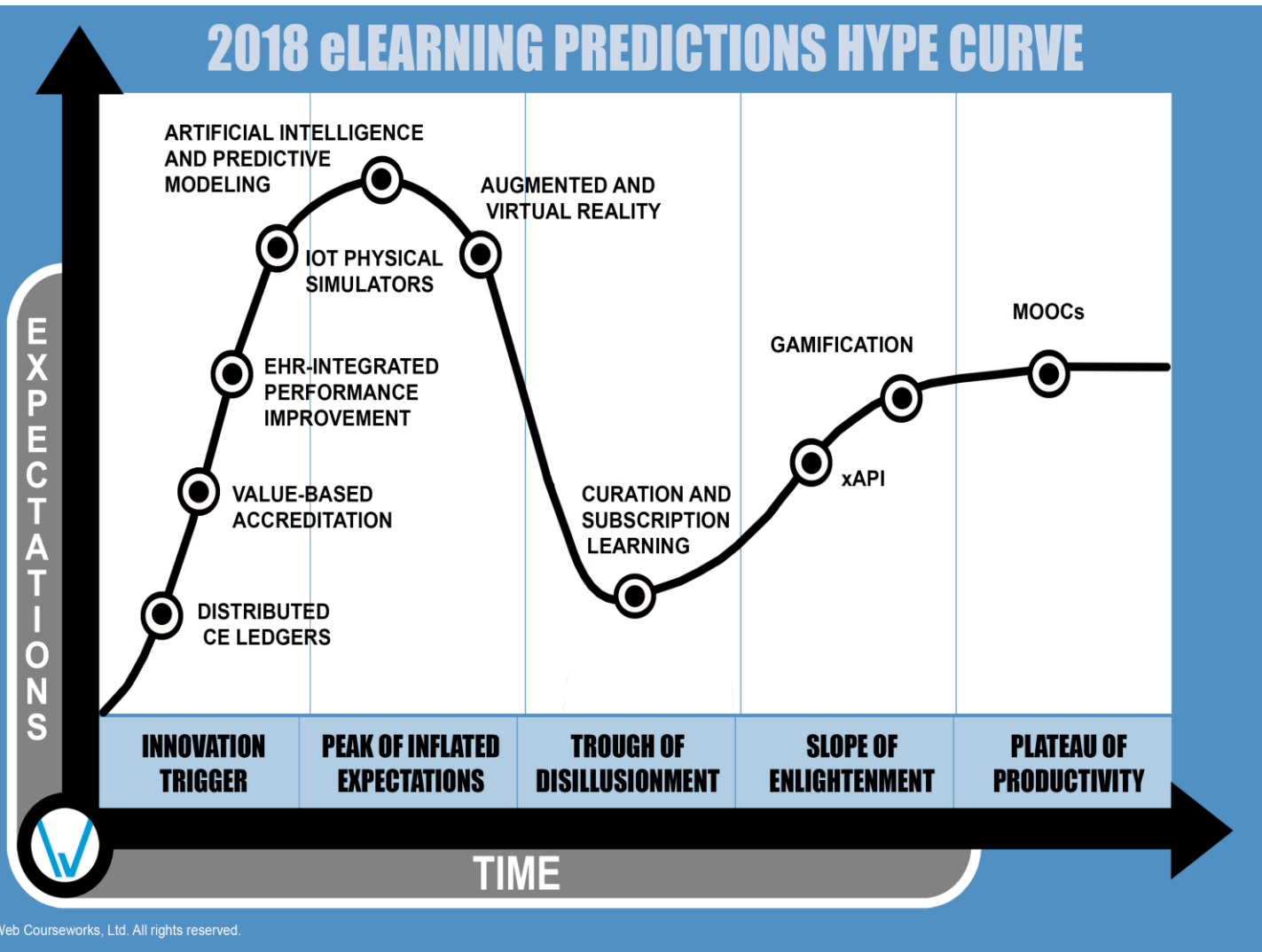
Emulation of Clinical Decision Making
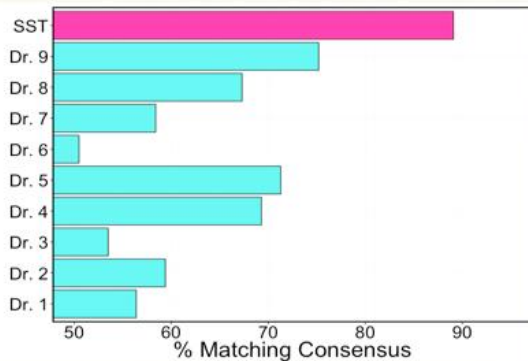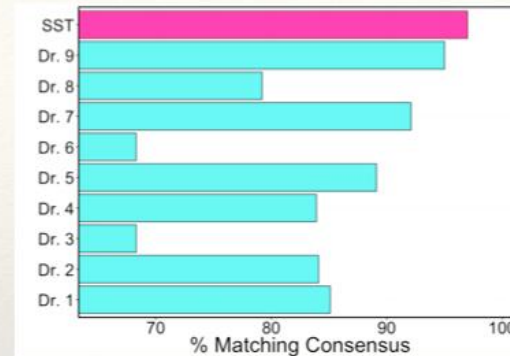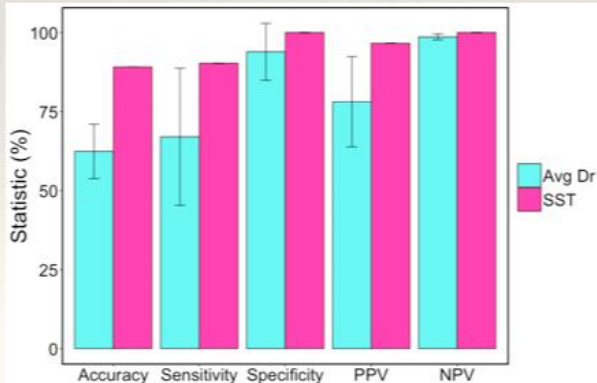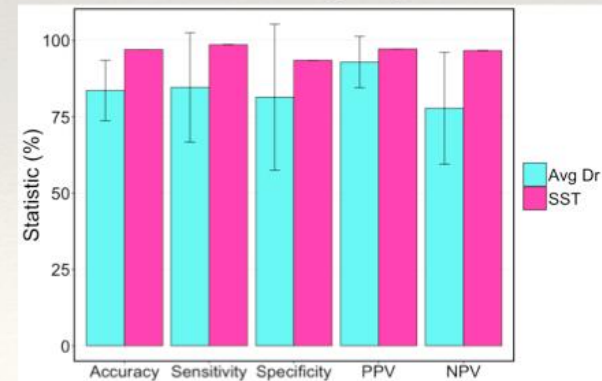
Poll Question

Where do you think we are on the AI/ML hype cycle as it related to instructional design and delivery business?

A) Peak
B) Trough
C) Slope
D) Plateau
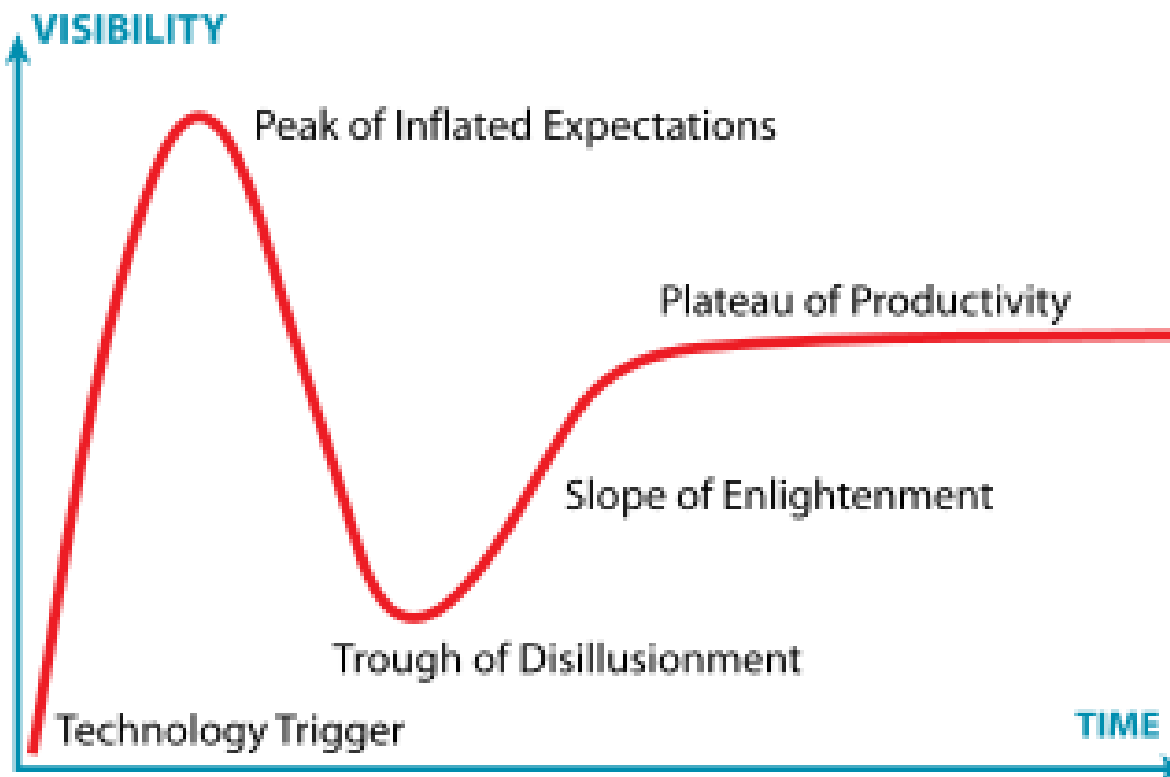
Where are we on the Hype Cycle?

https://webcourseworks.com/2018-elearning-predictions-updated-hype-curve/

Opportunities for the ID&D Professional Today?

- The top of the hype cycle means the category will consolidate to a few, high value, working solutions in the near future

- Nearly every enterprise considering AI is doing it without thinking all the way through roles and capabilities in the organization

- Now is the best time for "hand raisers" or individuals willing to suggest they can help sort it out

Two Things for Monday Morning

- Get to know a data scientist

- Experiment with an AI-based learning system (Babylon Health, DuoLingo, etc…)

- Build your own "pitch" for the benefits of expertise in designing, developing and evaluating acheived performance solutions regardless of whether it is human, tech or human+tech

Thank You!

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