

WILL A ROBOT TAKE MY JOB?

Robots, Artificial Intelligence, Supply Chain and You!

Bob Collins, CPIM-F, CIRM, CSCP, CPLP, CAE

The Bob Collins Group

Dec 2021 – COVID-19 Version



Artificial Intelligence

WILL A ROBOT TAKE MY JOB?

Robots, Artificial Intelligence, Supply Chain and You!

Bob Collins, CPIM-F, CIRM, CSCP, CPLP, CAE
The Bob Collins Group

A close-up photograph of a person's hands writing on a white document. The person is wearing a light blue button-down shirt. Their right hand holds a black and silver pen, and their left hand rests on the paper. The background is blurred, showing more of the shirt and some indistinct shapes.

**“MY JOB TITLE WAS
‘COMPUTER.’”**

“Along came
MRP, and . . .

my job was
replaced by a
different
computer.”



CC Image by [sifpceuc](#) from [Pixabay](#)

FROM “COMPUTER” TO “PLANNER”

analysis

Multiple product lines

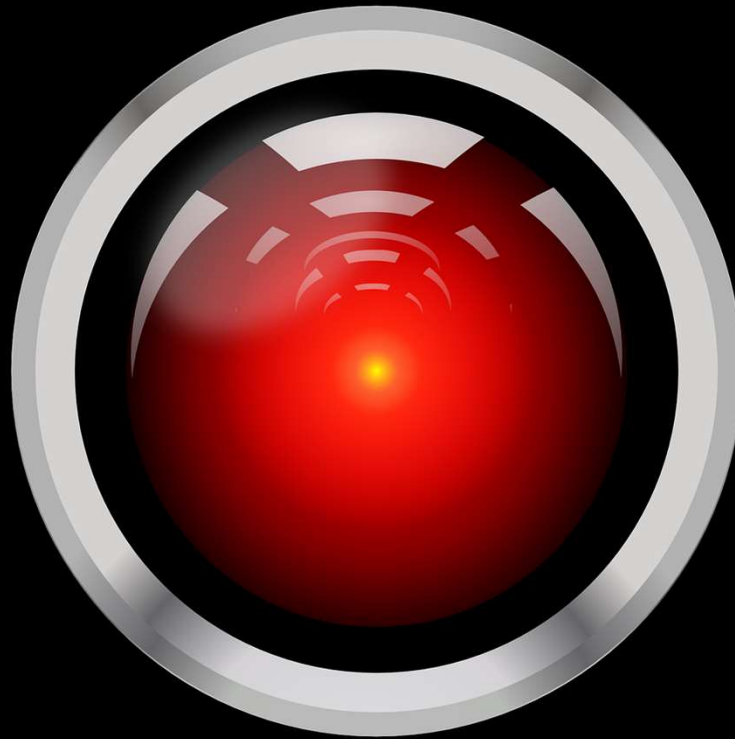
CC Image by [Gerd Altmann](#) from [Pixabay](#)



Robots

Artificial
Intelligence

Augmented
Intelligence



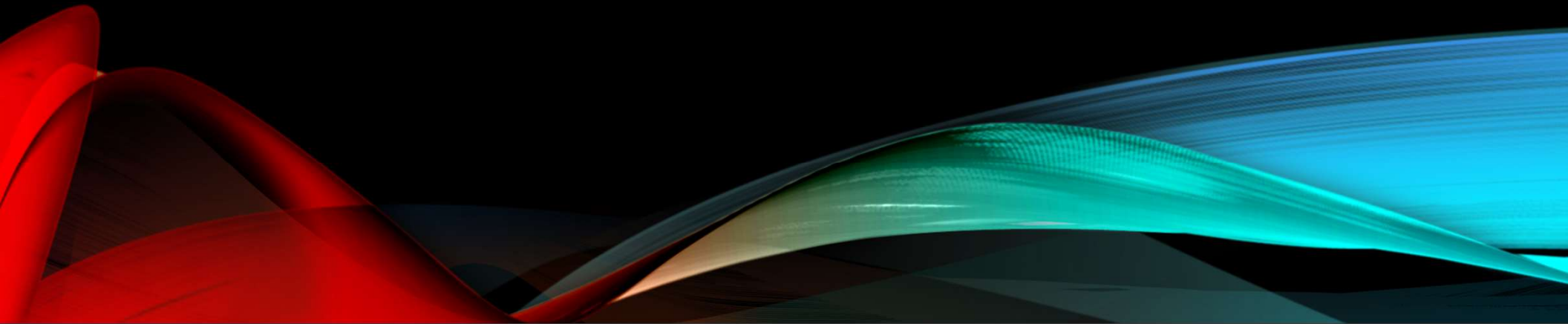
(No “standard”
definitions)

Most Important Lesson:



CC: Nicosmos [Public Domain], from Wikipedia Commons

LEVELS OF AI





CC Image by Geralt, on Pixabay

ARTIFICIAL INTELLIGENCE – LEVEL 1

1. Artificial Narrow Intelligence (ANI) or “Weak” AI
2. Specializes in one specific area

“Weak” AI
does not
imply that
current AI
is not
POWERFUL!



CC Image by [Brigitte Werner](#) from [Pixabay](#)

Chess
playing AI:
It may be
great
at winning
chess, but
that is
literally **all**
it can do.

ONE JOB – **REALLY WELL**



CC Image by Pexels on Pixabay

EXAMPLES: ARTIFICIAL NARROW INTELLIGENCE (WEAK AI)

- Self-driving cars and trucks
- Face-recognition – security, banks, your new iPhone
- Voice recognition and understanding of common dialects
 - Fledgling personal assistants - Alexa, Cortana, and Siri
- Bots that
 - fill in your tax form for you – using all your financial data
 - book your flights and hotels for you, using your previous preferences
 - make a personal music playlist for you, using your previous preferences

WOULD YOU LIKE TO TALK TO AN AI?

“ALEXA, LET’S CHAT”

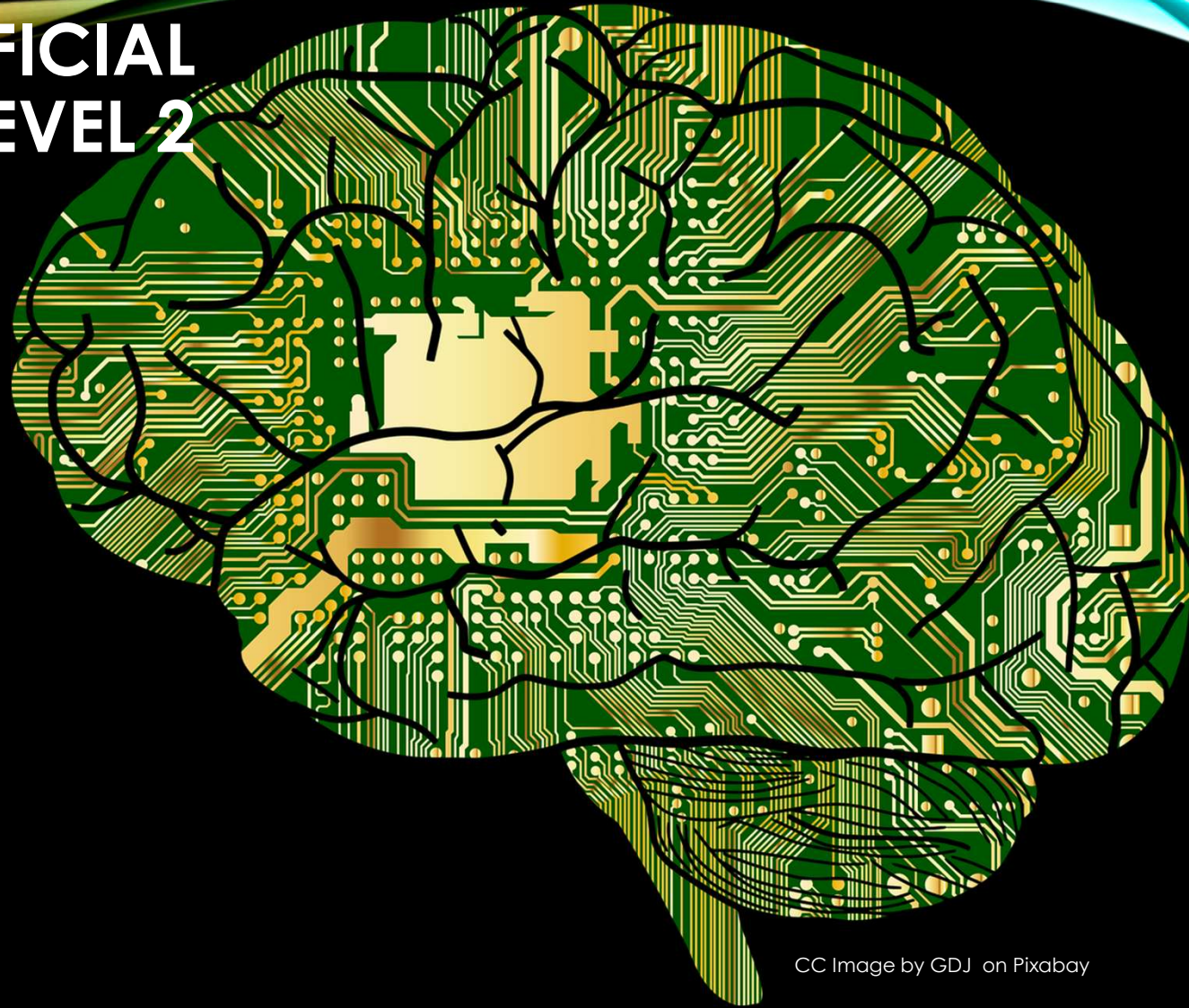


You can chat with the **winning programs** from the **Alexa Prize**, Amazon's global university competition to advance conversational AI.

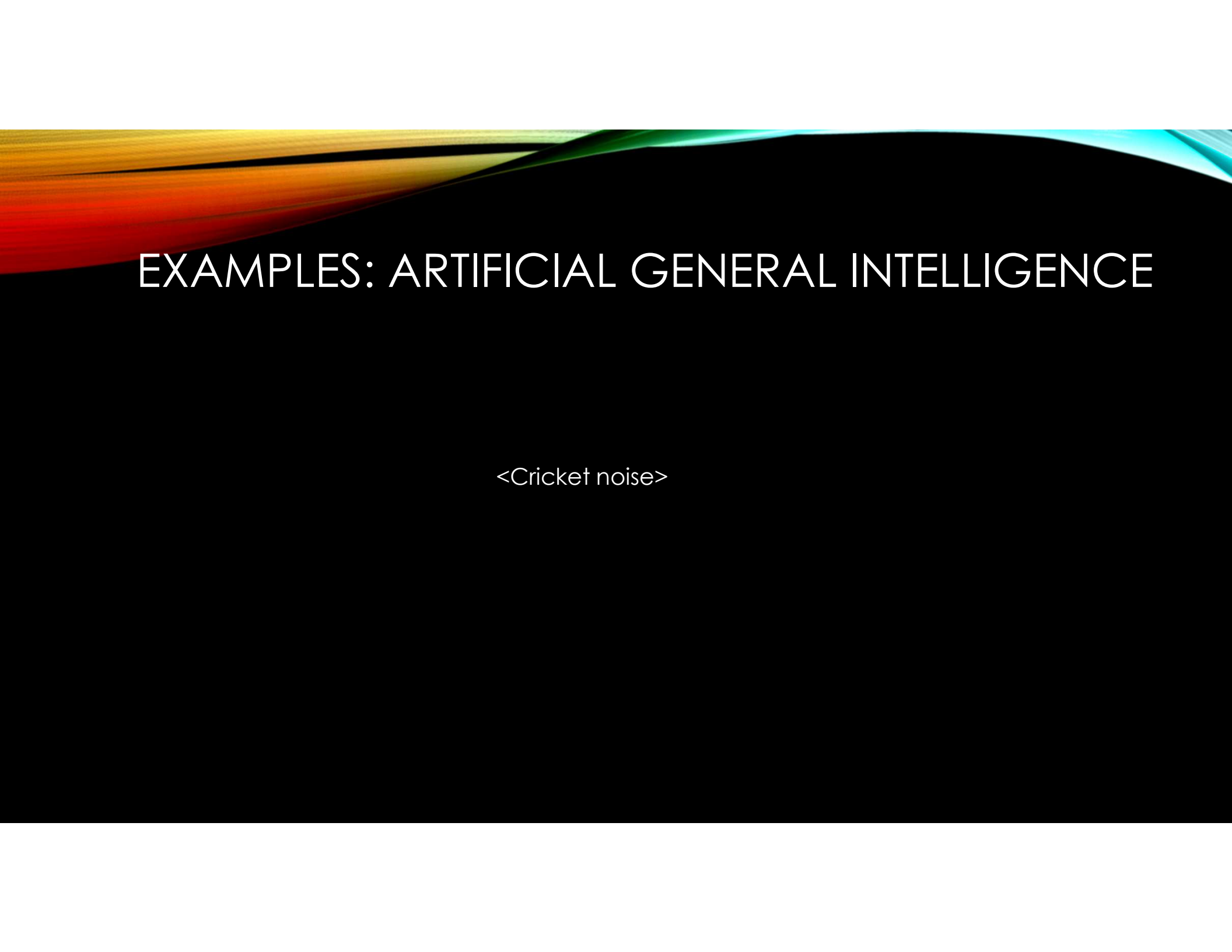
© Amazon

ARTIFICIAL INTELLIGENCE – LEVEL 2

1. Artificial General Intelligence (AGI), “Strong” AI or Human-Level AI,
2. A computer that has the intelligence of a human **across the board**
3. Much harder to create than ANI



CC Image by GDJ on Pixabay



EXAMPLES: ARTIFICIAL GENERAL INTELLIGENCE

<Cricket noise>



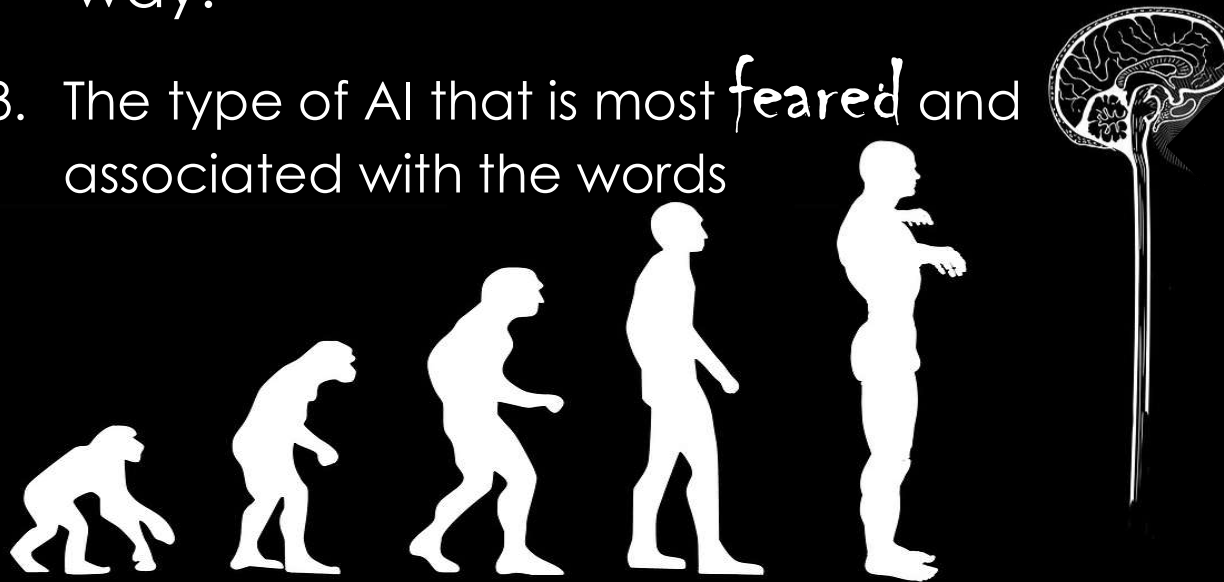
LEVEL 3 - THE HOLY GRAIL

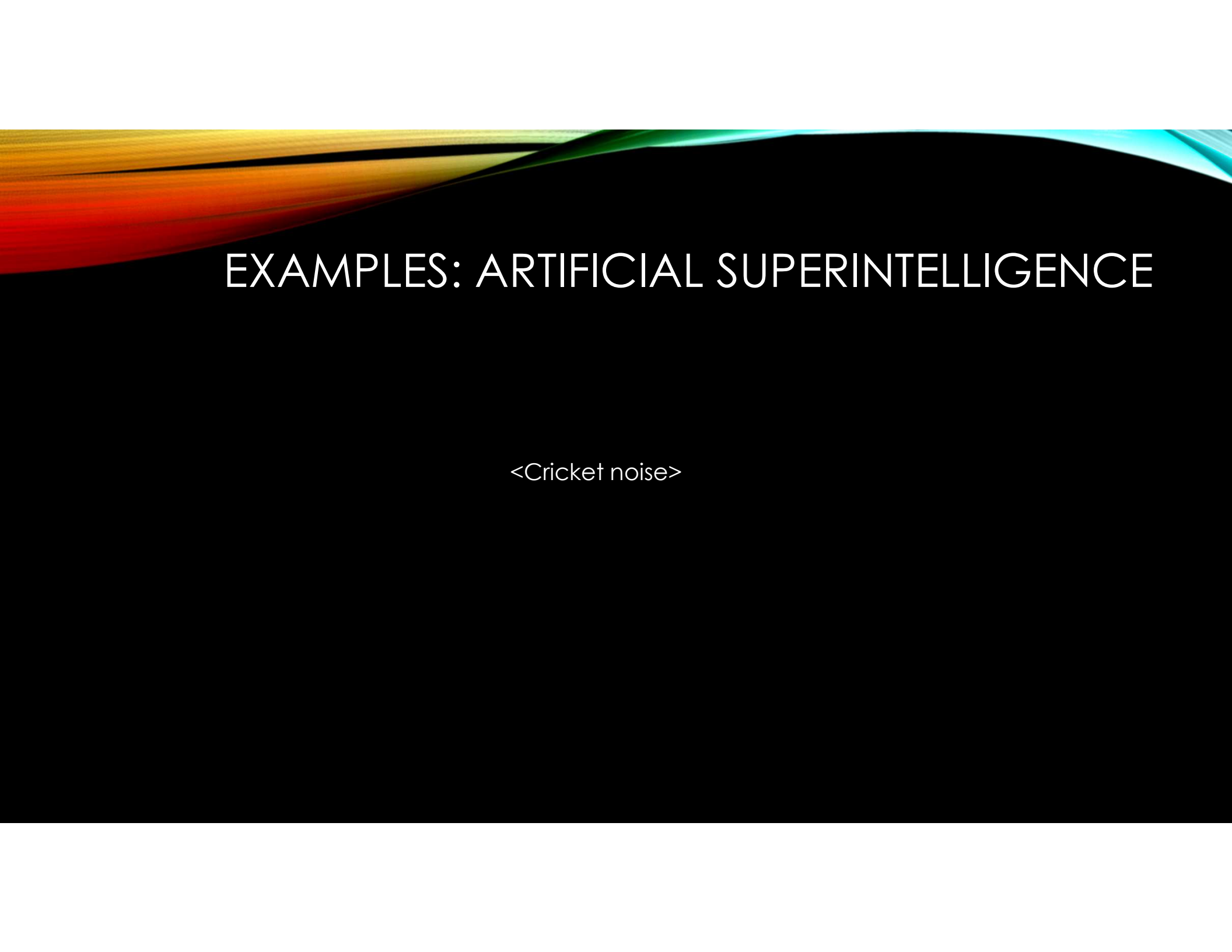
ARTIFICIAL INTELLIGENCE – LEVEL 3

1. Artificial Superintelligence or ASI
2. Ranges from a computer that's just a little smarter than a human to one that's billions of times smarter in every way.
3. The type of AI that is most feared and associated with the words

"doom"

"extinction."





EXAMPLES: ARTIFICIAL SUPERINTELLIGENCE

<Cricket noise>

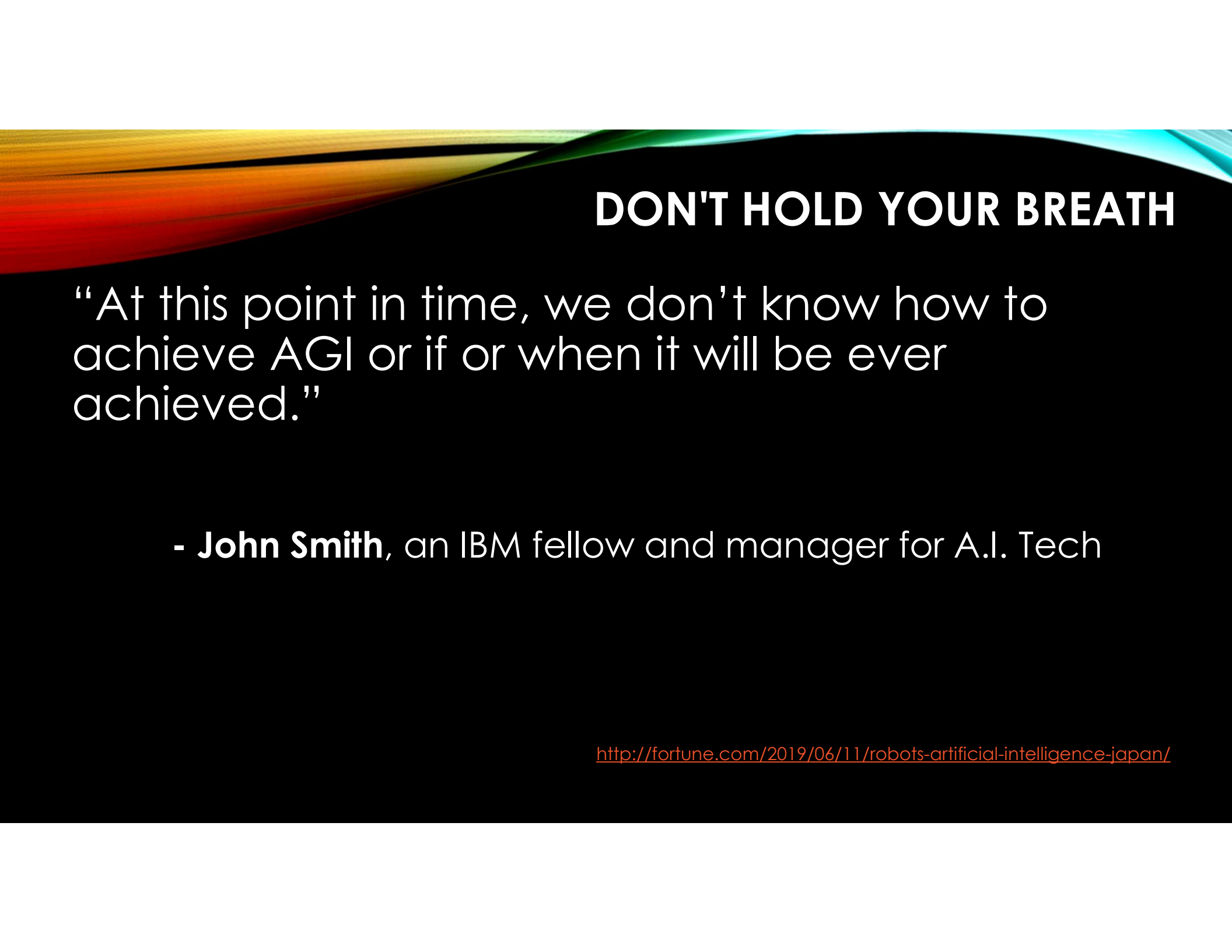


CC: [Vicki Burton](#) at Flickr.com

Superintelligence
by 2100 is?

- A. inevitable
- B. impossible

NO AGREEMENT
AMONG THE
EXPERTS!



DON'T HOLD YOUR BREATH

“At this point in time, we don’t know how to achieve AGI or if or when it will be ever achieved.”

- **John Smith**, an IBM fellow and manager for A.I. Tech

<http://fortune.com/2019/06/11/robots-artificial-intelligence-japan/>

NEWS & POLITICS

CULTURE

FOOD

salon

SCIENCE & HEALTH

LIFE STORIES

VIDEO



Search...



Artificial intelligence research may have hit a dead end

"Misfired" neurons might be a brain feature, not a bug — and that's something AI research can't take into account

By **THOMAS NAIL** APRIL 30, 2021 10:00PM (UTC)



Artificial Intelligence robot face is divided in two parts, completion and networking on circuit background (Getty Images)

TECHNOLOGY OVERHYPE?

History is full of technological over-hyping.

Where are those jet packs and flying cars, we were promised we'd have by now?



IN THE NEWS

New York Times, Sunday, February 26, 1928

MARCH OF THE MACHINE MAKES IDLE HANDS

By EVANS CLARK.

A FEW days ago the General Motors Corporation reported the largest peace-time earnings ever made by a single concern in the history of America. Three days later Governor Smith made public a report from the New York Industrial Commissioner which called public attention to serious unemployment throughout the State: not since the depression of 1921, it was disclosed, have conditions been as bad.

The people of the United States—in the shadow of a Presidential election—are presented with a social

Prevalence of Unemployment With Greatly Increased Industrial Output
Points to the Influence of Labor-Saving Devices as an Underlying Cause



have gone far to make construction a machine industry instead of a collection of hand trades. One gasoline crane takes the place of ten or twelve laborers. The hod-carrier has disappeared before the invasion of the material hoist. In concrete construction building materials are mixed, like dough, in a machine and literally poured into place without the touch of a human hand. The Ohio figures record these results: with 15 per cent. fewer men employed, contractors put up 11 per cent. more square feet of finished buildings last year than in 1923.

Coal Mined by Machines.

<https://timeline.com/robots-have-been-about-to-take-all-the-jobs-for-more-than-200-years-5c9c08a2f41d>

AUTOMATION LOOMING LARGE IN LABOR PICTURE
**Automation⁹ Might End Most¹
Unskilled Jobs In 10 Years**
***Automation Linked
To Jobless Count***

1961

<https://timeline.com/robots-have-been-about-to-take-all-the-jobs-for-more-than-200-years-5c9c08a2f41d>

Robots have been about to take all the jobs for more than 200 years

Is it really different this time?



Louis Anslow

Follow

May 16, 2016 · 7 min read



<https://timeline.com/robots-have-been-about-to-take-all-the-jobs-for-more-than-200-years-5c9c08a2f41d>

“... the scenario (that a super-smart AI would enslave or annihilate humans) makes about as much sense as the worry that since jet planes have surpassed the flying ability of eagles, someday they will swoop out of the sky and seize our cattle.”

Steven Pinker



Steven Pinker, *ENLIGHTENMENT NOW: The Case for Reason, Science, Humanism, and Progress*, Viking, an imprint of Penguin Publishing Group, a division of Penguin Random House LLC. Copyright © 2018 by Steven Pinker

Jet Image by Pixabay on Pexels.com
Cow Image by Merio on Pixabay

Image by David
Mark from Pixabay

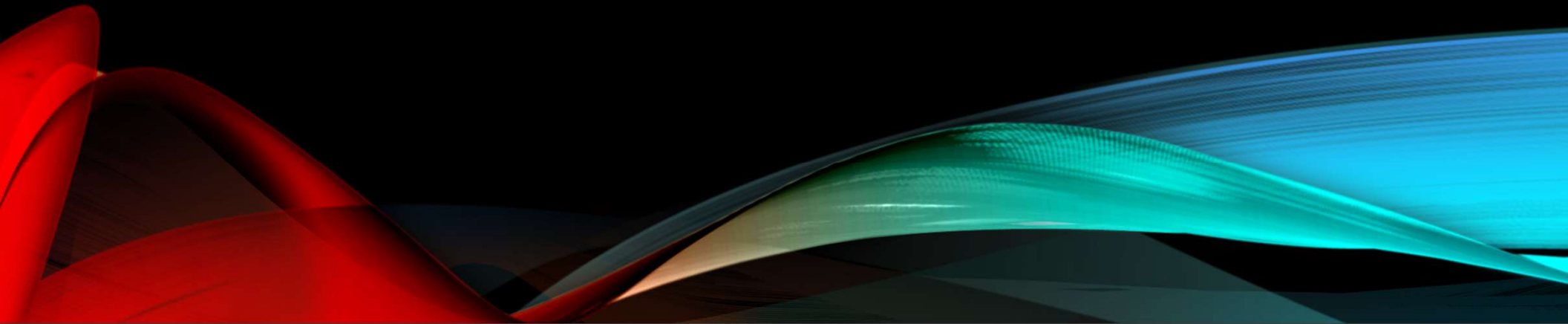
DEEP LEARNING AS “MAGIC”

“Looking at what you can do with deep learning today and thinking “let’s scale this up to AGI” is basically the equivalent of watching a magic trick and thinking ‘wow magic is real! im gonna start a magic company that uses magic spells to generate infinite value.’”

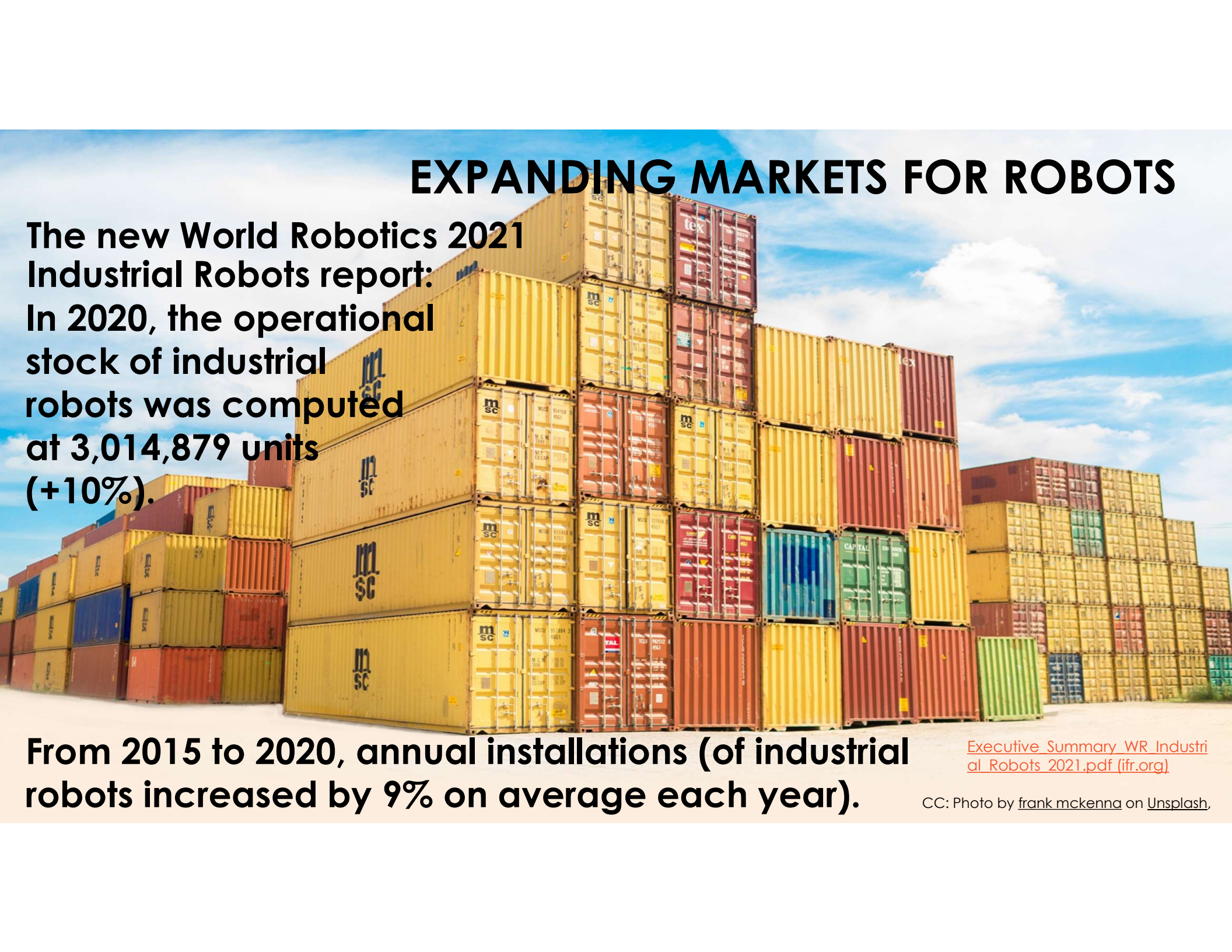
- **François Chollet**, a prominent A.I. researcher at **Google**

<https://twitter.com/fchollet/status/1137788467591565312>

ROBOTS, ARTIFICIAL & AUGMENTED INTELLIGENCE AND SUPPLY CHAIN



EXPANDING MARKETS FOR ROBOTS



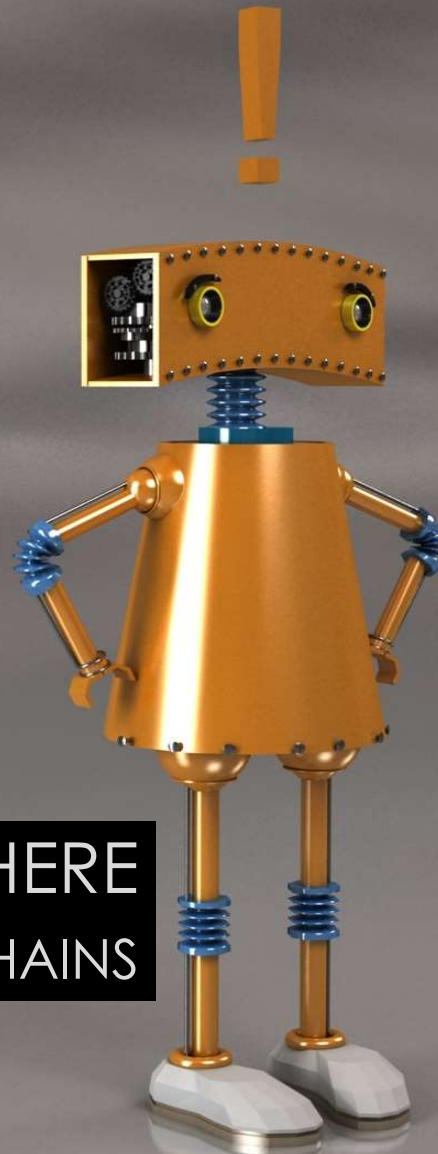
**The new World Robotics 2021 Industrial Robots report:
In 2020, the operational stock of industrial robots was computed at 3,014,879 units (+10%).**

From 2015 to 2020, annual installations (of industrial robots increased by 9% on average each year).

[Executive Summary WR Industrial Robots 2021.pdf \(ifr.org\)](#)

CC: Photo by [frank mckenna](#) on [Unsplash](#).

THE ROBOTS ARE HERE
IN OUR SUPPLY CHAINS



CC Image by Fernandozhiminaicela from Pixabay



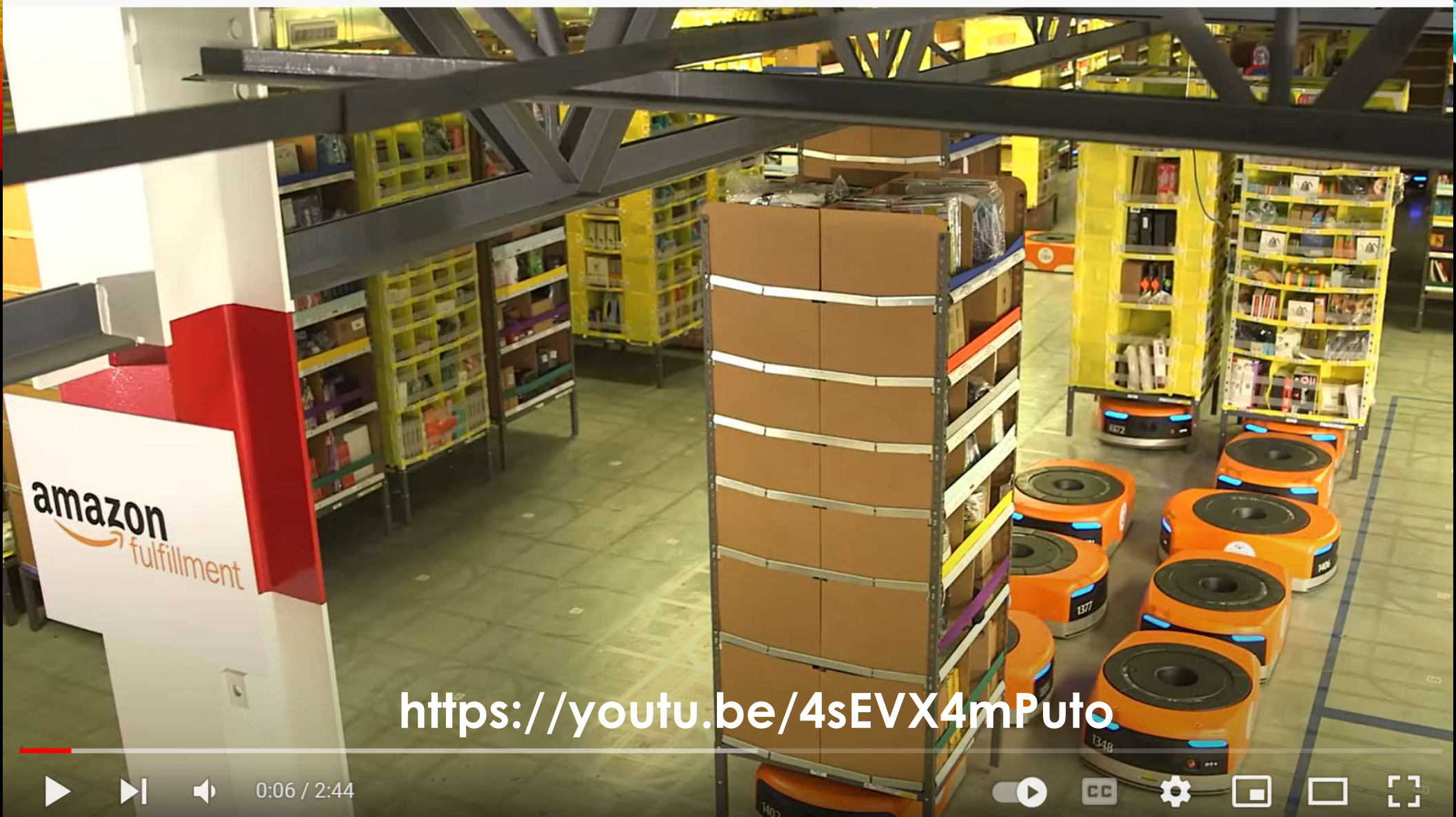
KUKA INDUSTRIAL ROBOTS IR

CC Mixabest [CC BY-SA 3.0 (<https://creativecommons.org/licenses/by-sa/3.0/>)]

FACTORY AUTOMATION ROBOTICS PALETTIZING BREAD



Public domain - <http://www.kuka-robotics.com>



<https://youtu.be/4sEVX4mPuto>



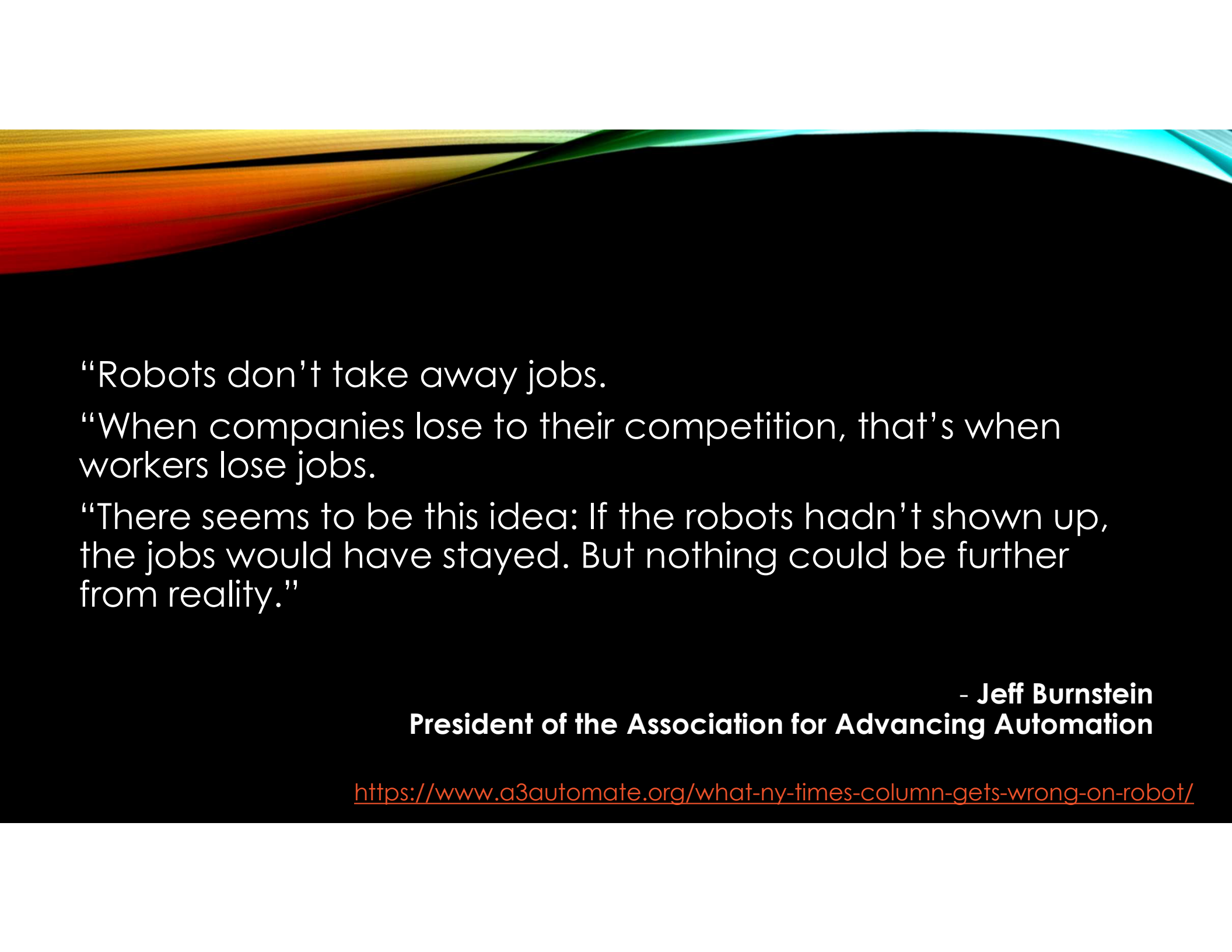
Is THIS your future??

HELP WANTED

No Humans Need
Apply

Image by [Lola Kno](#) from [Pixabay](#),
CC





“Robots don’t take away jobs.

“When companies lose to their competition, that’s when workers lose jobs.

“There seems to be this idea: If the robots hadn’t shown up, the jobs would have stayed. But nothing could be further from reality.”

- Jeff Burnstein
President of the Association for Advancing Automation

<https://www.a3automate.org/what-ny-times-column-gets-wrong-on-robot/>

A hand wearing a grey sweater sleeve holds a glowing blue wireframe mesh of a hand. The mesh is composed of many small triangles and is positioned over a laptop screen. The background is a dark, textured surface.

ARTIFICIAL INTELLIGENCER IS HERE
IN OUR SUPPLY CHAINS

CC Image by kiquebg on Pixabay

A conceptual image featuring a glowing incandescent lightbulb with a white base. The base is replaced by a complex, articulated robotic arm with multiple joints and segments. This robotic arm is plugged into a standard white wall outlet. The lightbulb is illuminated, casting a warm glow. The background is a textured, wood-grain wall. The overall scene is dimly lit, with the primary light source being the lightbulb itself.

“AI is the new
electricity”

- Andrew Ng

<https://www2.deloitte.com/us/en/insights/focus/technology-and-the-future-of-work/ai-in-the-workplace.html>

CC Image by [Colin Behrens](#) from [Pixabay](#)

AI IN SUPPLY CHAIN



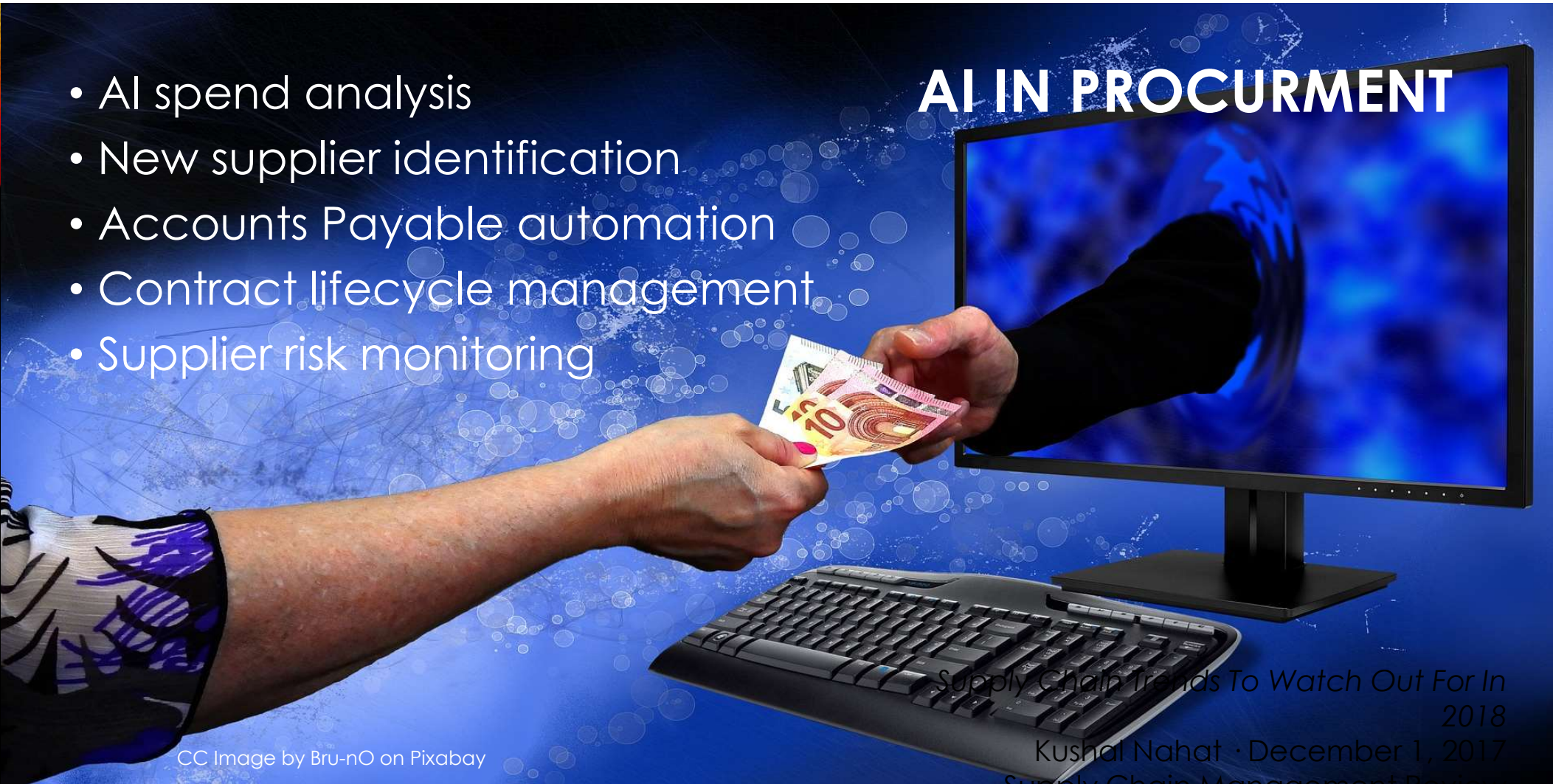
CC Image by Tumisu on Pixabay

- Improve demand forecasting by analyzing large volumes of data
- Streamline Supply, Demand and Inventory Management
- Optimize Warehouse Management and Logistics
- Automate vehicles in Distribution Centers and other Logistics Operations

<https://www.blumeglobal.com/learning/artificial-intelligence/>

- AI spend analysis
- New supplier identification
- Accounts Payable automation
- Contract lifecycle management
- Supplier risk monitoring

AI IN PROCURMENT



CC Image by Bru-nO on Pixabay

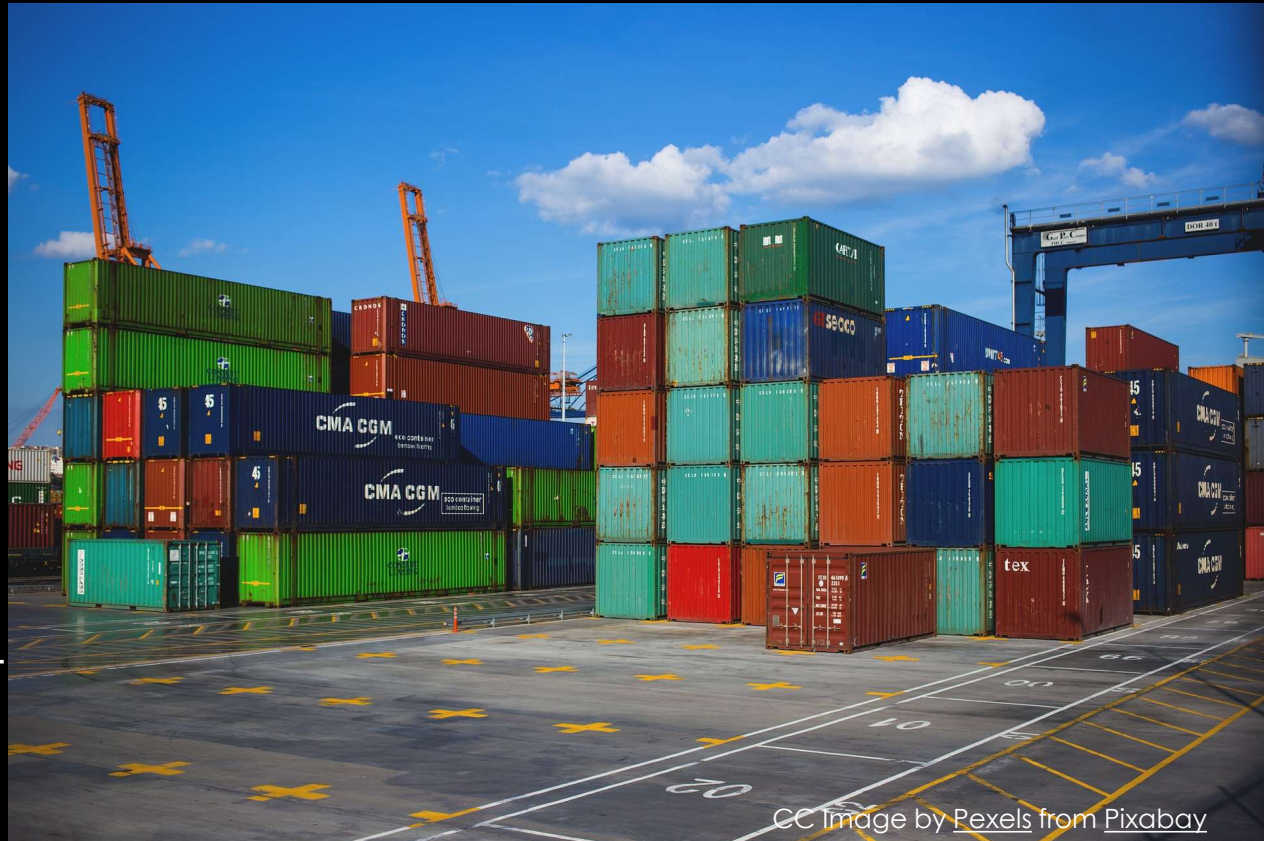
Supply Chain Trends To Watch Out For In
2018

Kushal Nahat · December 1, 2017

Supply Chain Management Review

AI IN DEMAND MANAGEMENT

- Optimize demand planning, forecast accuracy, and better control of inventories.
- Demographic, social, economic and other analysis can identify consumer trends that will change demand for specific products.



CC Image by [Pexels](#) from [Pixabay](#)

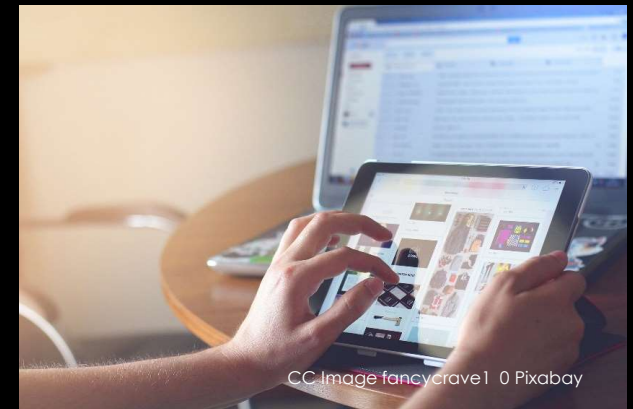
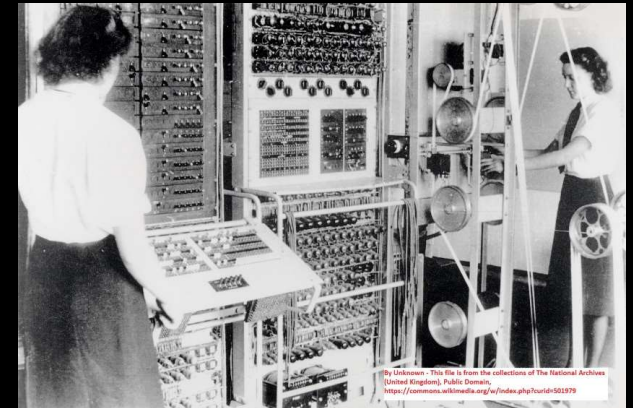
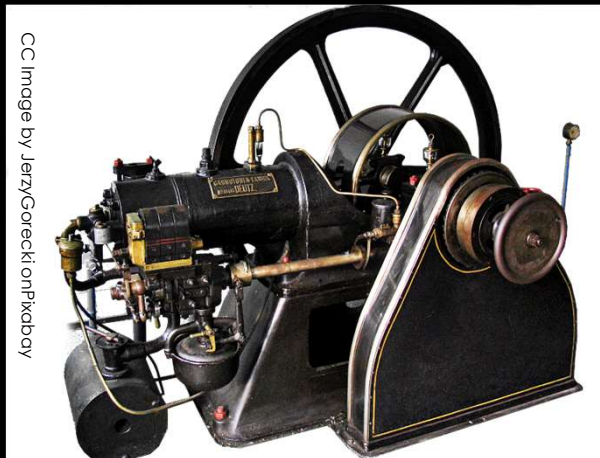
IMPROVING FORECAST ACCURACY

AI analyzes enormous volumes of data and provides an endless loop of forecasting, continuously adjusting the forecast based on real-time sales, weather and other factors.



AUGMENTED INTELLIGENCE IS HERE
IN OUR SUPPLY CHAINS

TOOLS AUGMENT OUR ABILITIES





AUGMENTED INTELLIGENCE

“The value of automation and AI lies not in the ability to replace human labor with machines, but in **augmenting the workforce and enabling human work to be reframed** in terms of problem solving and the ability to create new knowledge.”

Deloitte 2019 Human Capital Trends Report

“MACHINES ARE THE MISSING MIDDLE”

“... helping people to punch above their weight, providing them with superhuman capabilities, such as the ability to process and analyze copious amounts of data from myriad sources in real time. Machines are augmenting human capabilities.”

Paul Daugherty and Jim Wilson, “Human + Machine: Reimagining Work in the Age of AI”



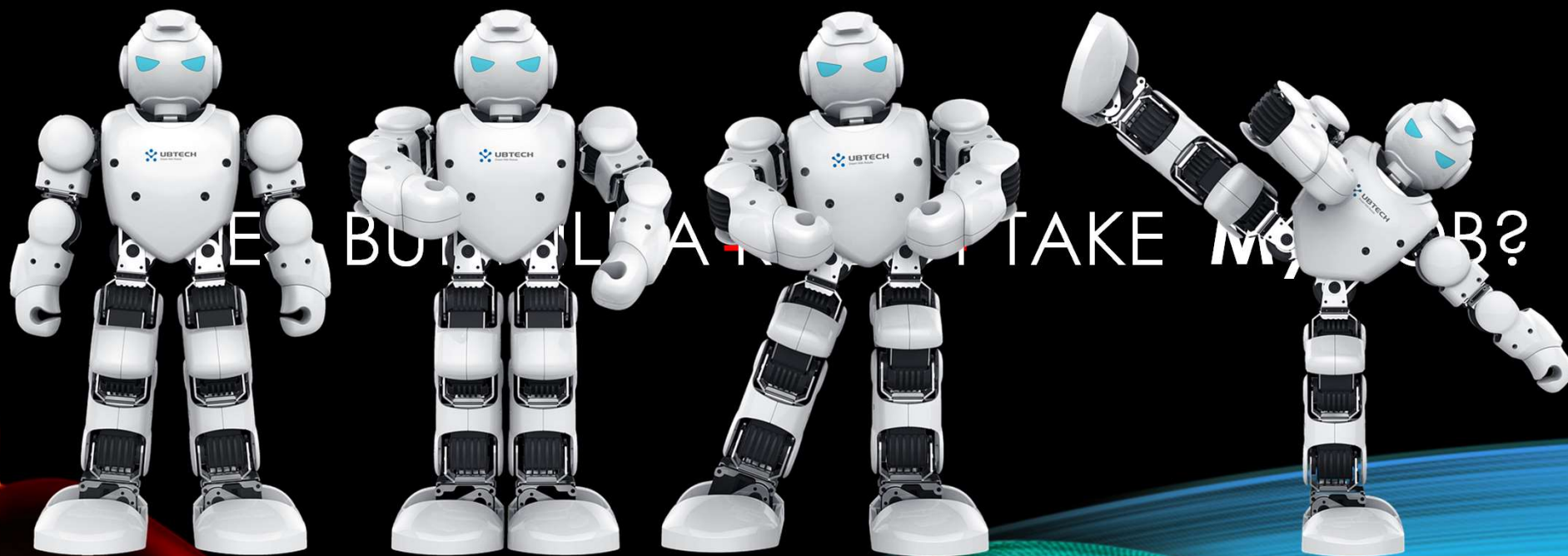
CC Image by [Gerd Altmann](#) from [Pixabay](#)

YES, BUT WILL A ROBOT TAKE **My** JOB?

CC Image by [Gerhard Janson](#) from [Pixabay](#)

AI
YES, BUT WILL A ~~ROBOT~~ TAKE **My** JOB?

CC Image by [Gerhard Janson](#) from [Pixabay](#)

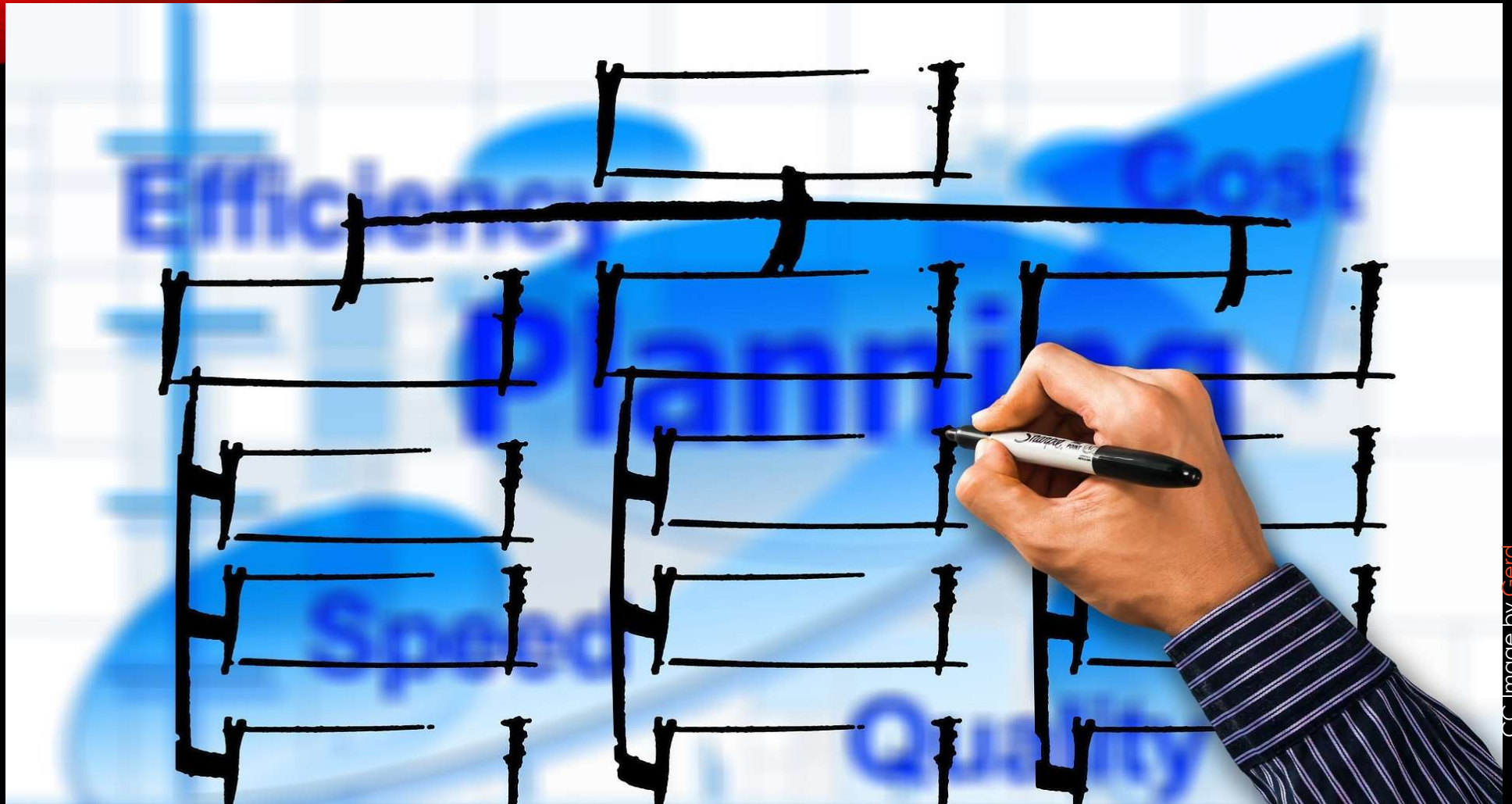


TAKE OVER TASKS, NOT JOBS!

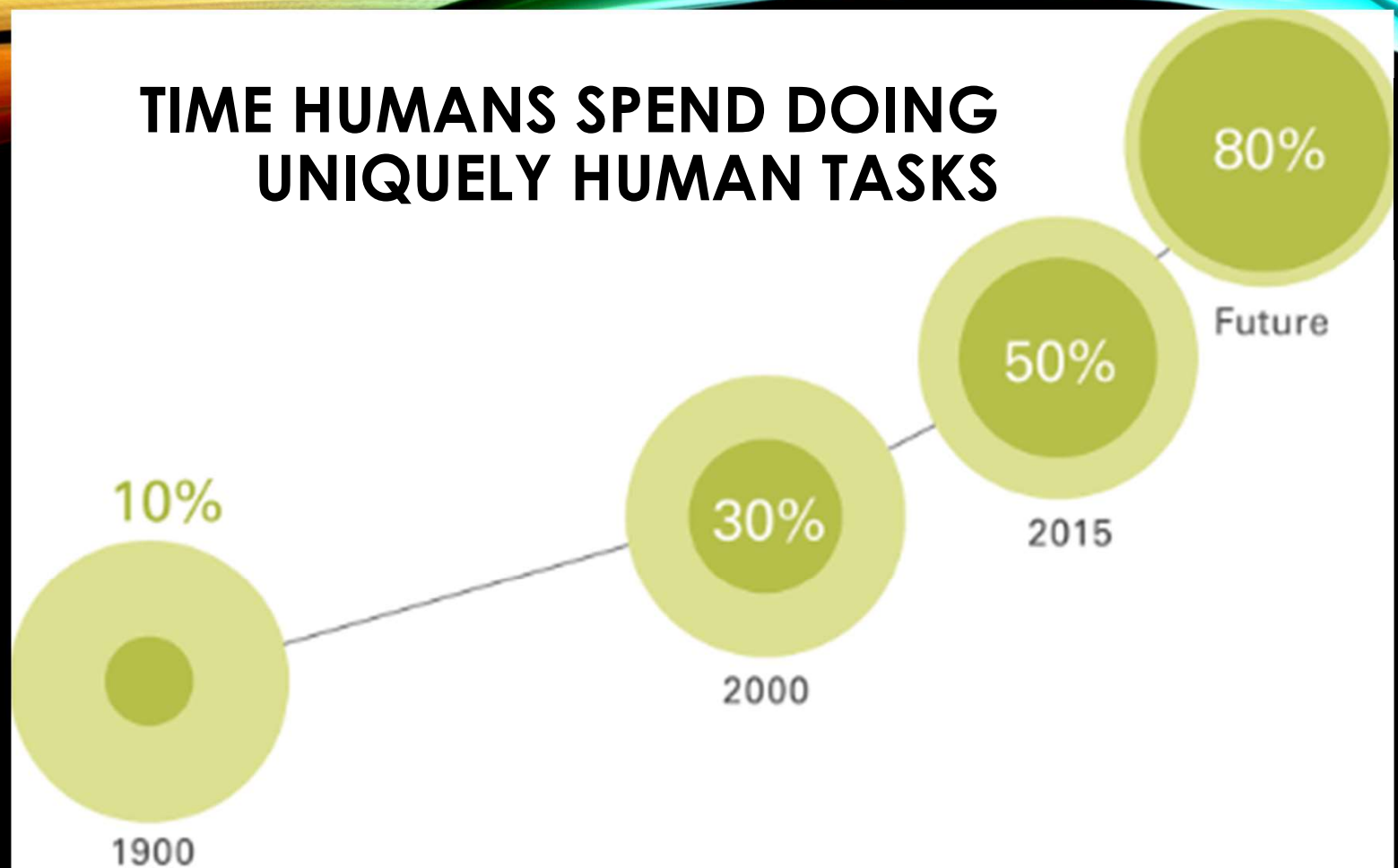


CC Image by TeroVesalainen on Pixabay

“REDESIGNING WORK” RATHER THAN “ELIMINATING JOBS”



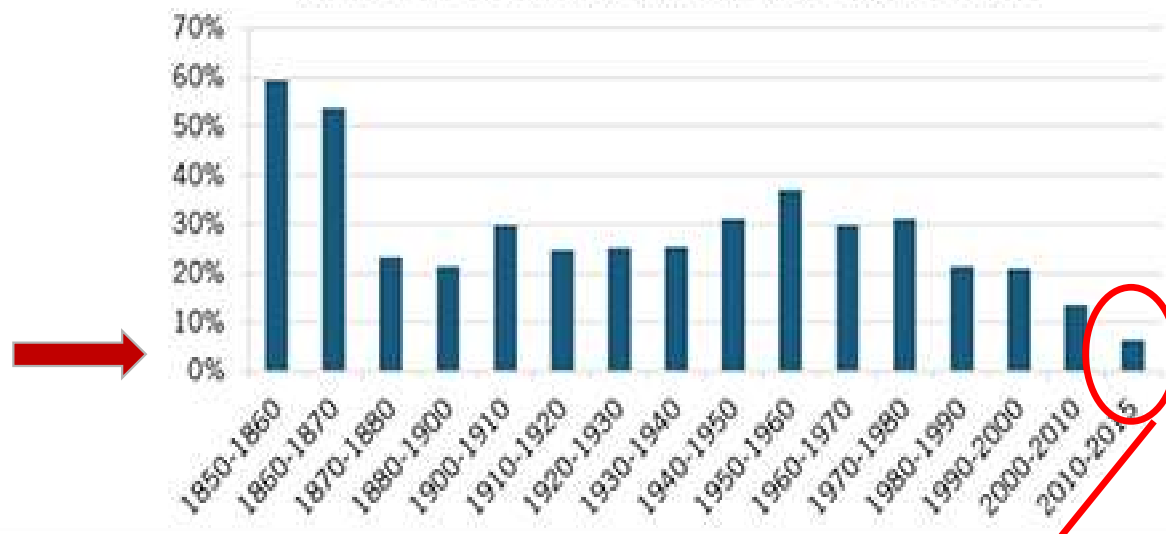
TIME HUMANS SPEND DOING UNIQUELY HUMAN TASKS



Sources: Vanguard calculations based on data from McKinsey & Company, U.S. Bureau of Labor Statistics, and U.S. Department of Labor O*NET OnLine.

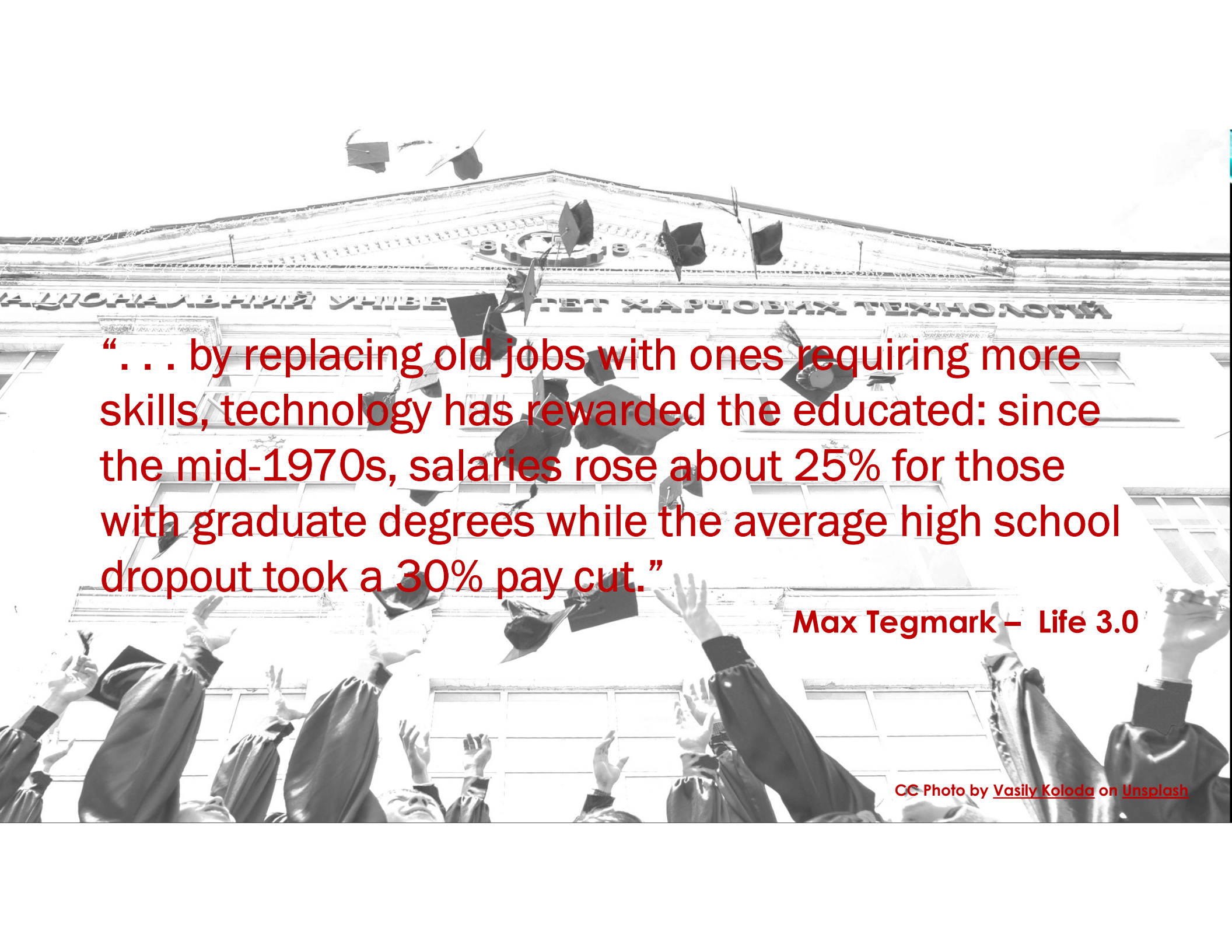
Technology is disrupting a record number of jobs...

Rate of Occupational Change by Decade



Learn more at itif.org/workseries



A black and white photograph of a graduation ceremony. In the foreground, several graduates in caps and gowns are seen from the chest up, with their arms raised and hands open, reaching towards the sky. Above them, several graduation caps are captured in mid-air, having just been tossed. In the background, a large, classical-style university building with a pediment is visible. The pediment features a circular emblem with the year '1918'. Below the pediment, the name of the university is inscribed in Cyrillic: 'НАЦИОНАЛЬНЫЙ УНИВЕРСИТЕТ ХАРКОВСКИХ ТЕХНОЛОГИЙ'.

“... by replacing old jobs with ones requiring more skills, technology has rewarded the educated: since the mid-1970s, salaries rose about 25% for those with graduate degrees while the average high school dropout took a 30% pay cut.”

Max Tegmark – Life 3.0

CC Photo by [Vasily Koloda](#) on [Unsplash](#)



OUR TOOLS CHANGE US!

“There hasn’t yet been a technology that has resulted in our working less. This is because machines don’t just replace what we do, they change the nature of what we do by extending our capabilities.

Our tools change us.”

MARINA GORBIS, Human plus Machine, © 2011
Institute for the Future

http://www.iff.org/uploads/media/Human_Plus_Machine_MG.png.pdf

EXAMPLE – THE ATM

First introduced around 1970

Hit widespread adoption in the late 1990s

Today, more than 470,000 ATMs in the US

But the number of bank tellers actually rose between 2000 and 2010

Even though the average number of tellers per branch fell, ATMs made it cheaper to open branches, so banks opened more of them.

On-line banking is brining in more change!



CC, Image by-OpenClipArt Vectors-Pixabay

IS AI KILLING JOBS? A REPORT BY ZIPRECRUITER

AI created about **three times** as many jobs as it took away in 2018
81% preferred human over completely autonomous system.

Middle-wage job growth outpaced low-wage opportunities between 2016 and 2018.

An increase in manufacturing jobs and the diversity of the roles reflect an industry that is creating quality jobs across the skills spectrum

<https://www.fastcompany.com/90369739/is-ai-killing-jobs-actually-it-added-3x-more-in-2018?mod=djemAIPro>

CC Image by Gerd Altmann from Pixabay



THE PANDEMIC & THE FUTURE OF WORK

Increase in automation and adoption of AI, however . . .

“ . . . 85% of the jobs that will be available in 2030 haven't been invented yet. Those [*in the workforce and*] entering the workforce will have a higher probability of an irrelevant skill set tomorrow.”

Forbes: *How the Pandemic is Changing the Future of Work*

<https://www.forbes.com/sites/forbestechcouncil/2020/10/27/how-the-pandemic-is-changing-the-future-of-work/?sh=347d50a68415>



THE NEED TO RESKILL & UPSKILL

“For those workers set to remain in their roles, the share of core skills that will change in the next five years is 40%, and 50% of all employees will need reskilling. . .”

- World Economic Forum's *The Future of Jobs Report 2020*

http://www3.weforum.org/docs/WEF_Future_of_Jobs_2020.pdf

OPPORTUNITY!

56%

Note: TALENT,
not
Technology

The percentage of executives who said their main AI challenge was a lack of talent, according to a Gartner survey reported in ZDNet.

<https://www.zdnet.com/article/enterprises-plan-to-double-ai-projects-in-play-by-2020/?mod=djemAIPro>



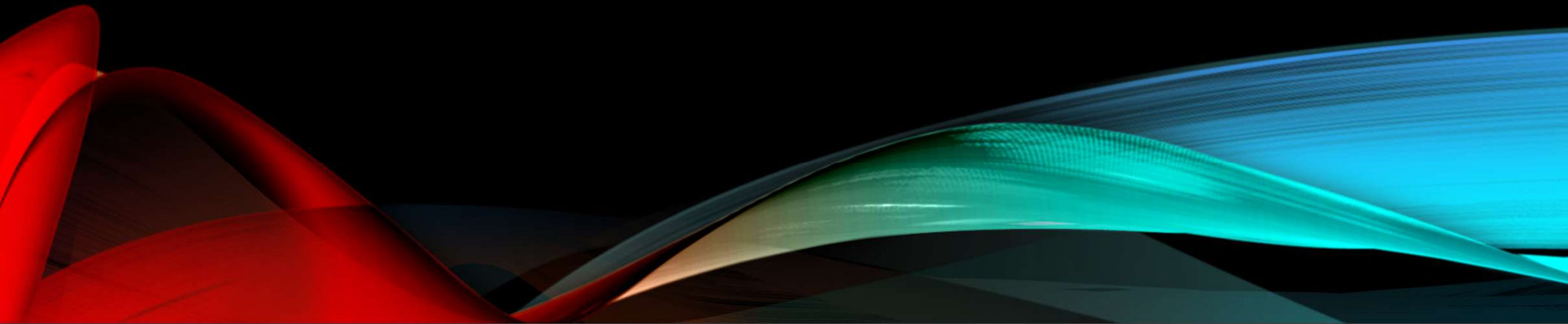
FROM JOBS TO SUPERJOBS

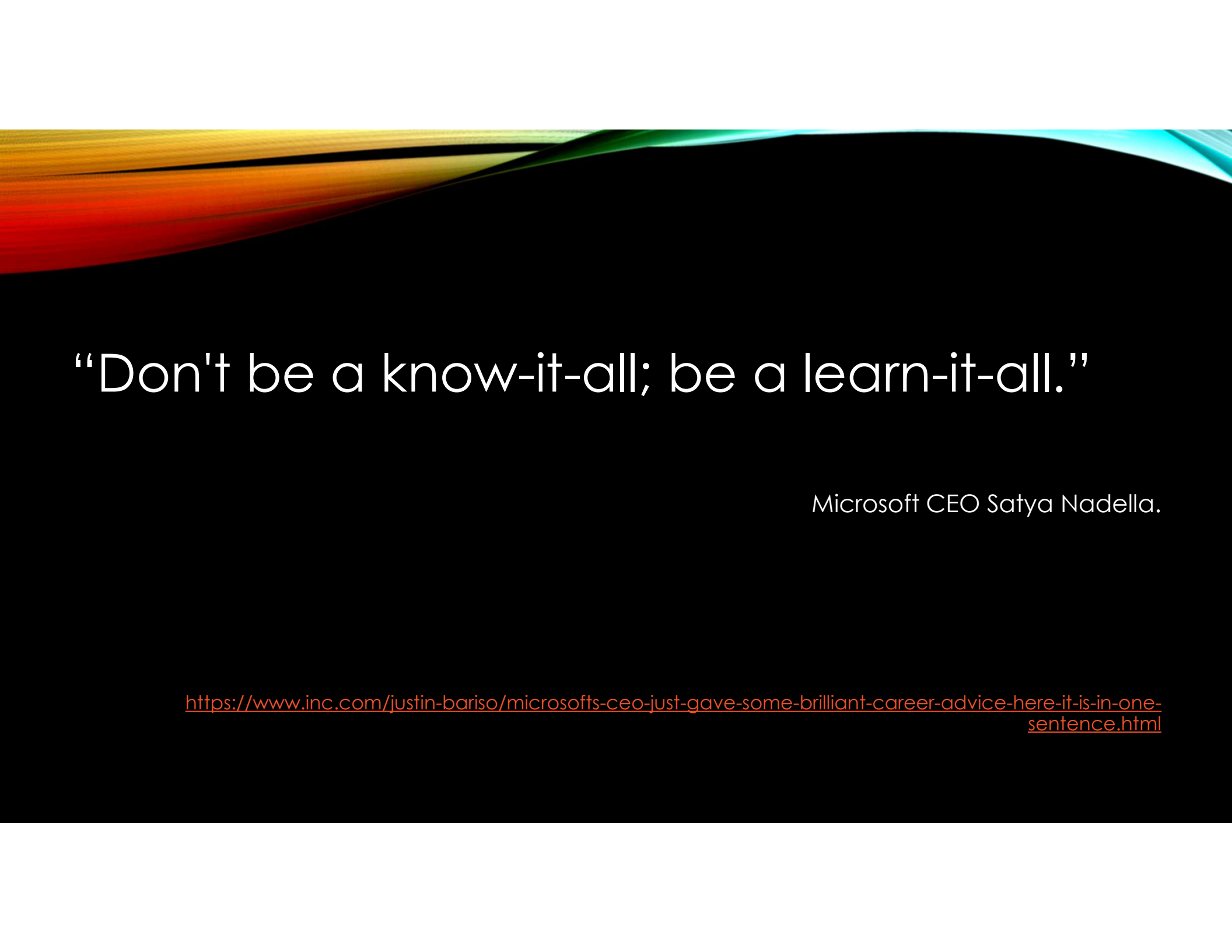
“As machines take over repeatable tasks and the work people do becomes less routine, many jobs will rapidly evolve into what we call “superjobs”—the newest job category that changes the landscape of how organizations think about work.”

- Deloitte 2019 *Global Human Capital Trends* Report

<https://www2.deloitte.com/insights/us/en/focus/human-capital-trends/2019/impact-of-ai-turning-jobs-into-superjobs.html>

HOW SHOULD YOU RESPOND?





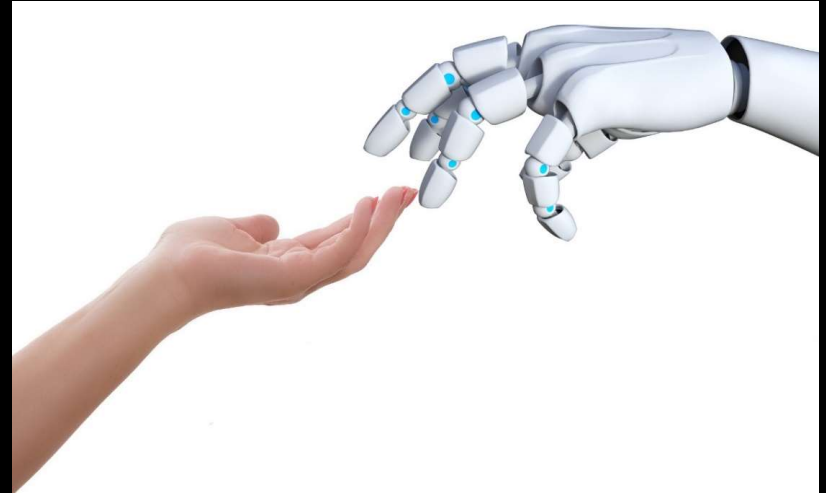
“Don't be a know-it-all; be a learn-it-all.”

Microsoft CEO Satya Nadella.

<https://www.inc.com/justin-bariso/microsofts-ceo-just-gave-some-brilliant-career-advice-here-it-is-in-one-sentence.html>

COMPUTERS/ROBOTS ARE BETTER AT:

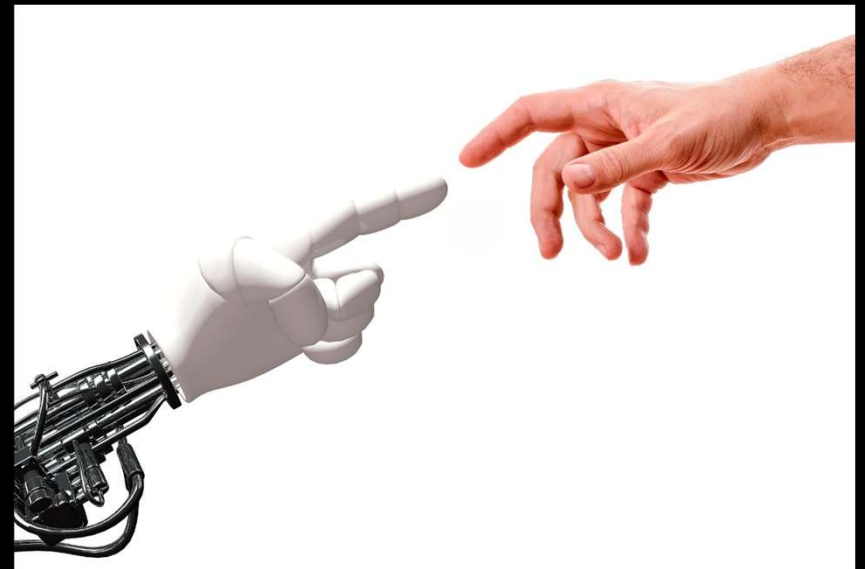
- Processing mathematics faster
- Handling “boring, repetitive” tasks
- Delicate, intricate work
- Working without getting hungry or tired
- Handling jobs too dangerous for humans
- Working both quicker and less expensively
- Creating new jobs with higher-level work and the ability to do that work



CC Image by JDG on Pixabay

HUMANS ARE BETTER AT:

- Non-routine physical work
- Performing complex tasks in 3-D space
- Feeling emotions and understanding the emotions of others, relationships
- Creativity
- Dealing with ambiguity and gray areas, understanding context or nuance, and making judgment calls
- Critical thinking skills



CC Image by JDG on Pixabay



Over the next decade, AI won't
replace managers, but
managers who use AI will
replace those who don't.

<https://hbr.org/cover-story/2017/07/the-business-of-artificial-intelligence>

THE FUTURE OF JOBS REPORT 2021 (MONSTER.COM)

Regardless of the industries being recruited, the top skills employers want are:

- **Dependability** (arriving at work on time, not taking excessive time off, following through on all assignments).
- **Teamwork/collaboration** (working well with others within their team and company as a whole).
- **Problem-solving** (the ability to be resourceful when it comes to work challenges and solve them without assistance).
- **Flexibility** (willingness to take on new work or new ways of working).

Final Piece of Advice:



By Nicosmos [Public Domain], from Wikipedia Commons

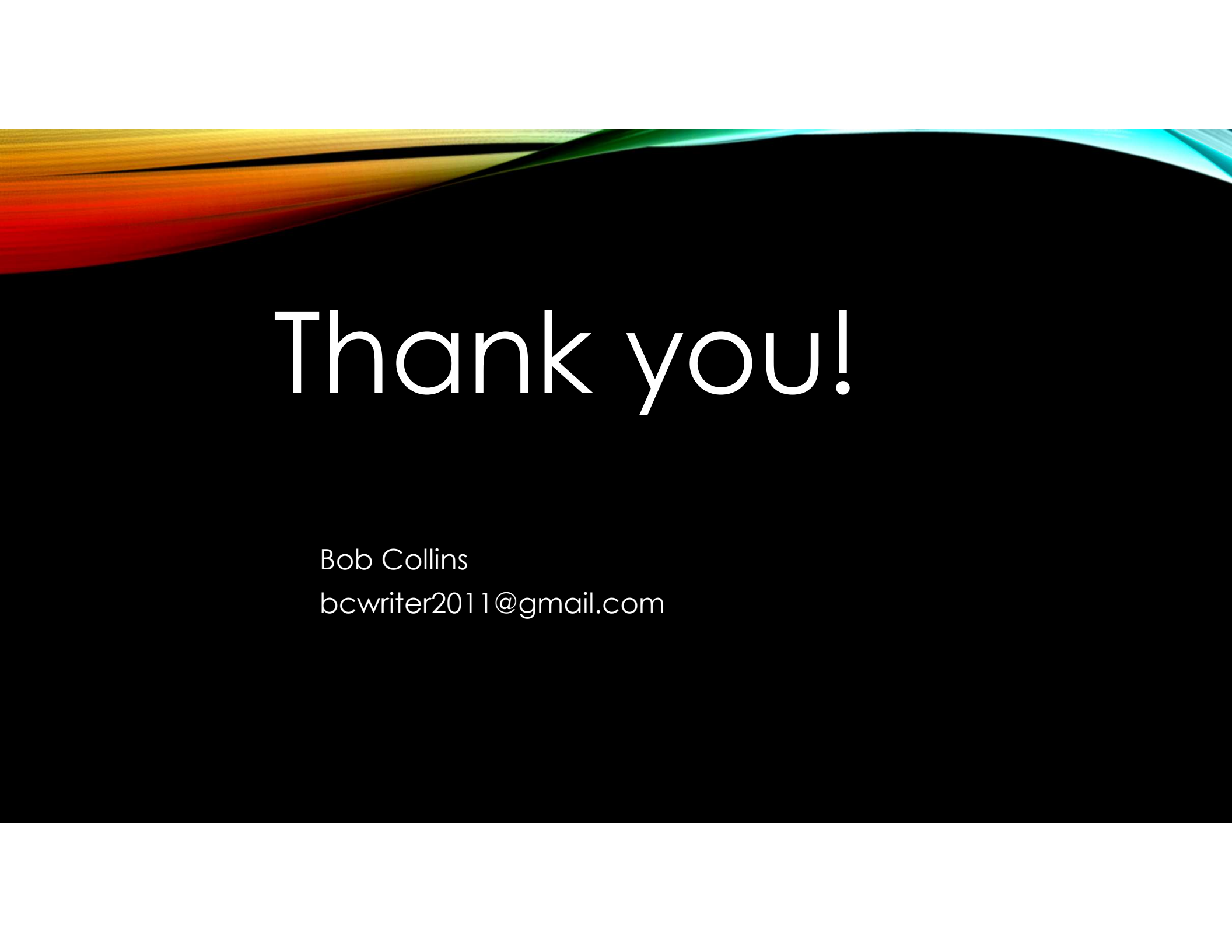
Questions?





BIBLIOGRAPHY (RECOMMENDED)

- Tegmark, Max, *Life 3.0: Being Human in the Age of Artificial Intelligence*, 2017, Borzoi Book, New York, NY.
- Daugherty, Paul R., and Wilson, H. James, *Human + Machine: Reimagining Work in the Age of AI*, 2018, Harvard Business Review Press
- Brynjolfsson, Erik and McAfee, Andrew, *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies*, 2014, W. W. Norton, New York, NY.
- Susskind, Richard and Susskind, Daniel, *The Future of the Professions: How Technology Will Transform the Work of Human Experts*, 2015, Oxford University Press



Thank you!

Bob Collins

bcwriter2011@gmail.com