The Age Of Artificial Intelligence: The World In 10 Years

AI &COGNITIVE SYSTEMS FORUM

CONNECTED TRANSPORT

MANUFACTURING

HEALTHCARE

ENERGY AND UTILITIES

BUILDINGS & INFRASTRUCTURE

OPEN INDUSTRY

ENABLING IoT

AI & COGNITIVE SYSTEMS FORUM

#IOTSWC19

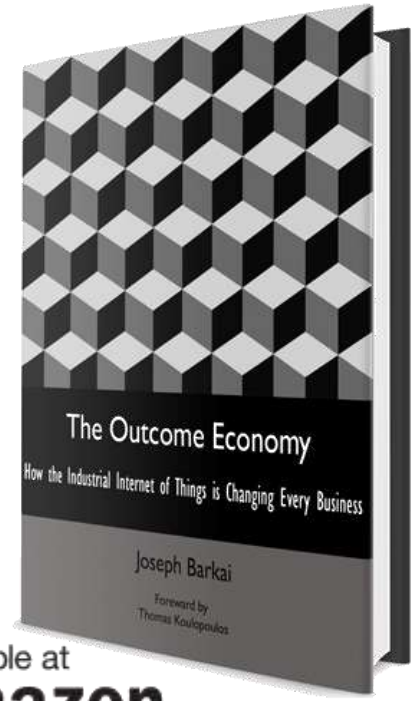
It's 2030

The World is Connected, Automated, Personalized (and Dangerous?)

@JoeBarkai

Joe Barkai

SAE INTERNATIONAL

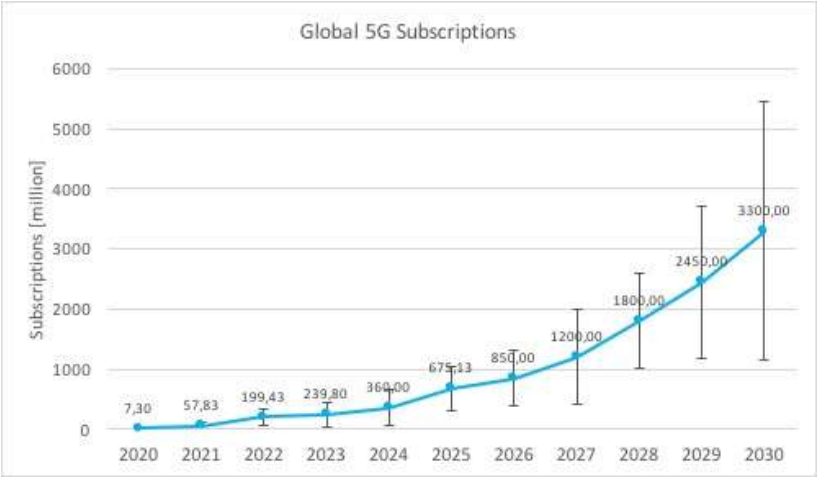


Available at amazon

Everything and Everyone is Connected

Ubiquitous computation

Lots of data...



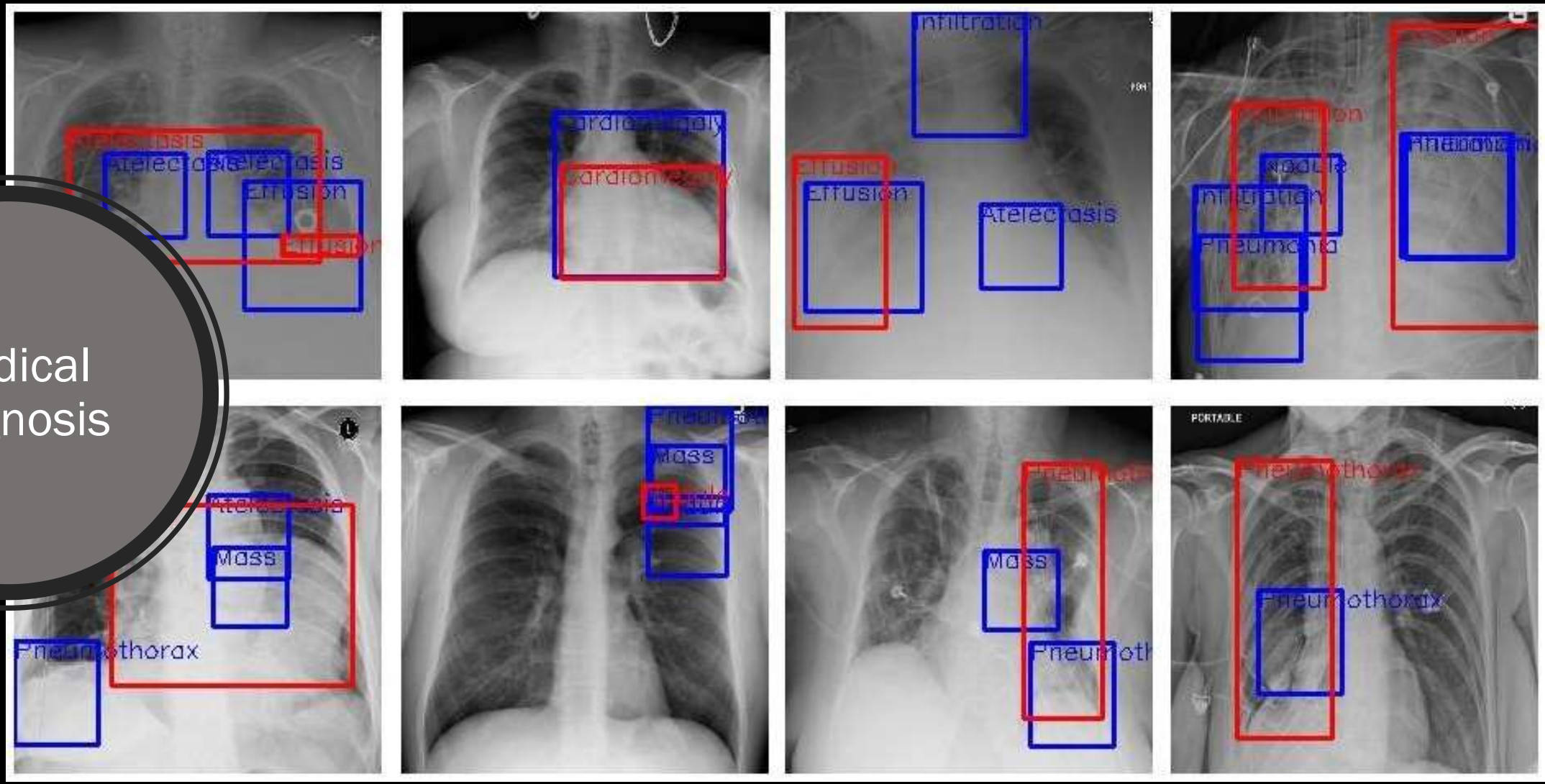
Source: Complied by edge-of-cloud.blogspot.com

Robots and Cobots

Adaptive, Self-leaning, Self-healing Robots

Robotic-Assisted Surgery

Medical Diagnosis



Autonomous Trucks

Will a Robot Take My Job?

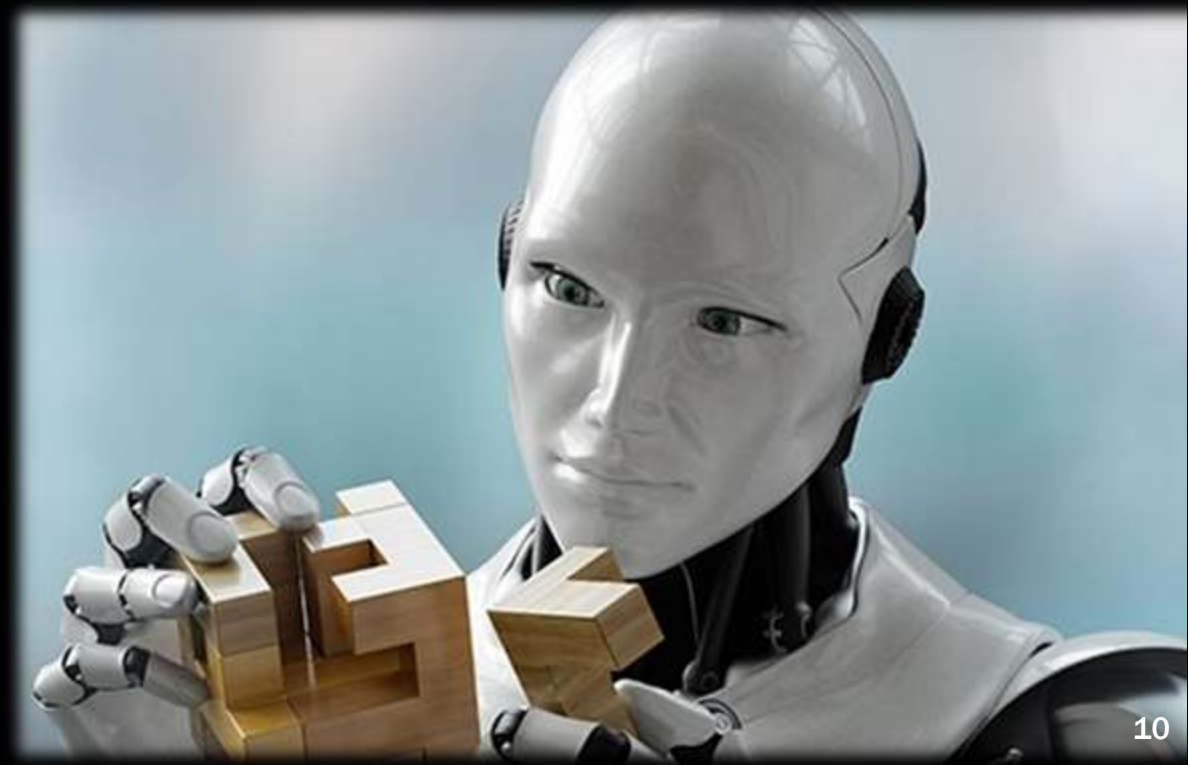
Yes,

No,

Maybe ...

When Will Artificial Intelligence Exceed Human Performance?

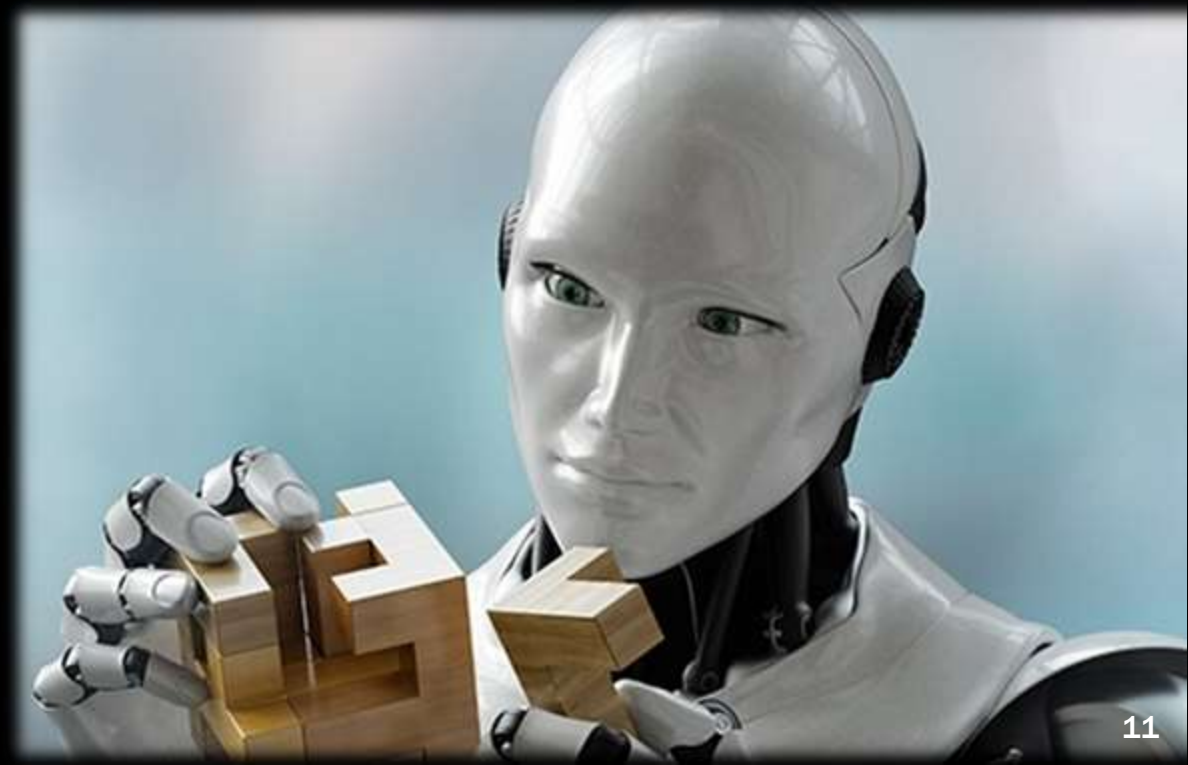
- 2024: translate languages
- 2026: write high-school essays
- 2027: drive a truck
- 2031: work in retail
- 2049: write a bestselling book
- 2059: work as a surgeon



Source: Katja Grace, John Salvatier, Allan Dafoe, Baobao Zhang, and Owain Evans, Future of Humanity Institute, Oxford University, AI Impacts, Department of Political Science, Yale University

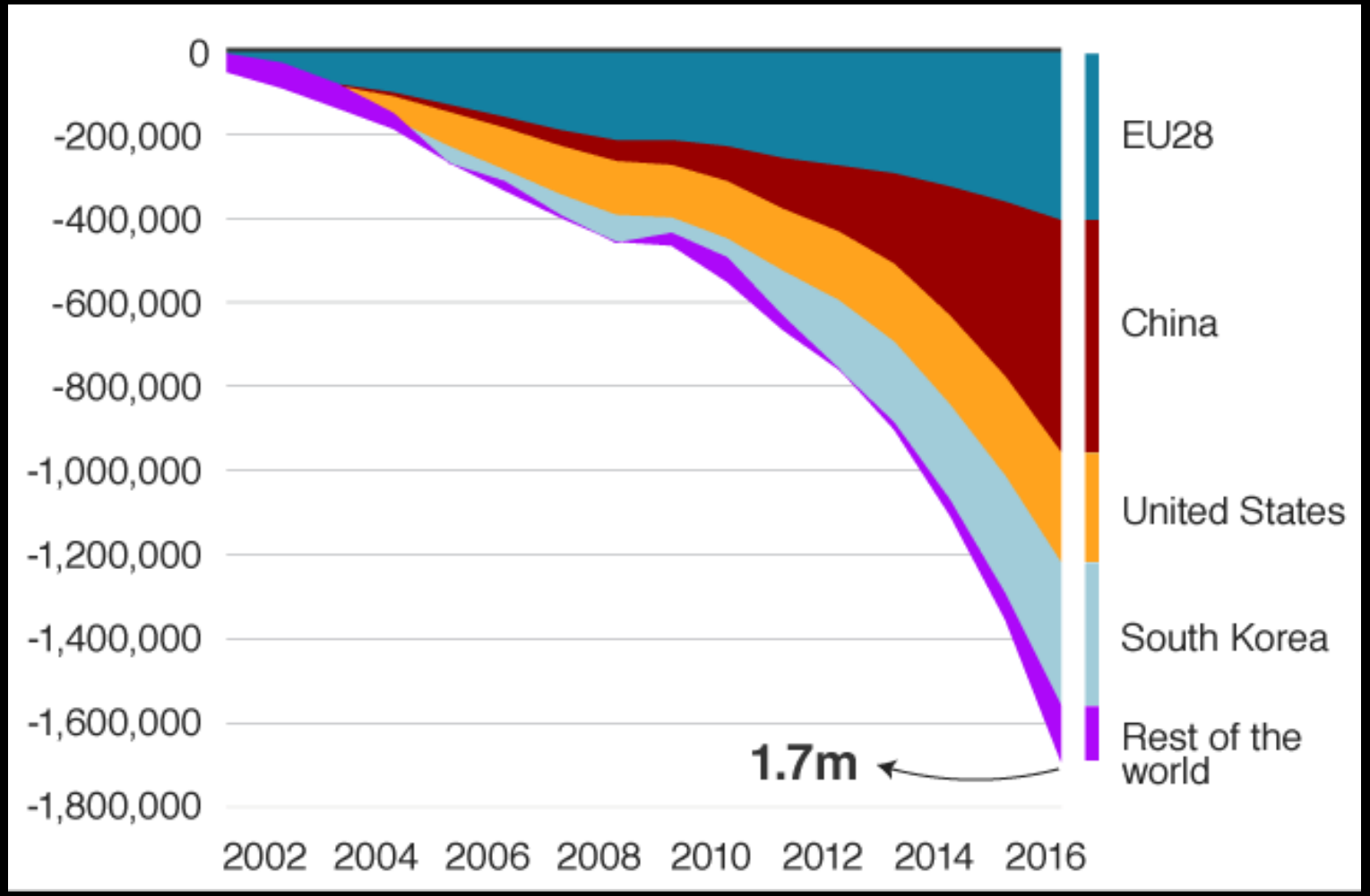
50% probability:

- AI outperforming humans in all tasks in 45 years
- AI automating all human jobs in 120 years



Source: Katja Grace, John Salvatier, Allan Dafoe, Baobao Zhang, and Owain Evans, Future of Humanity Institute, Oxford University, AI Impacts, Department of Political Science, Yale University

20 Million Jobs Lost to Automation by 2030



Source: Oxford Economics

In the Next 20 Years

Going Away…

- Travel Agents
- Drivers and logistics/supply chain
- Cashiers
- Postal workers
- Bank tellers
- Dispatchers
- Librarians
- Farmers
- Sport referees

Likely to Stay for a While…

- First-Line supervisors of mechanics, installers and repairers
- Emergency management directors
- Dietitians and nutritionists
- Mental health and substance abuse social workers
- Orthotists and prosthetists
- Physicians and surgeons
- Occupational & physical therapists
- Educating children
- Caring for the elderly

Better Chance of Survival in the New Job Market?

From Big Data to Hyper-personalization

Hyper Personalization

- Situational awareness
- They know before you know
- Customize products and sales campaigns without you being aware

You Are Not The Customer
You Are The Product!

Your Preferences and Experience are
Product Features
and
Competitive Differentiator

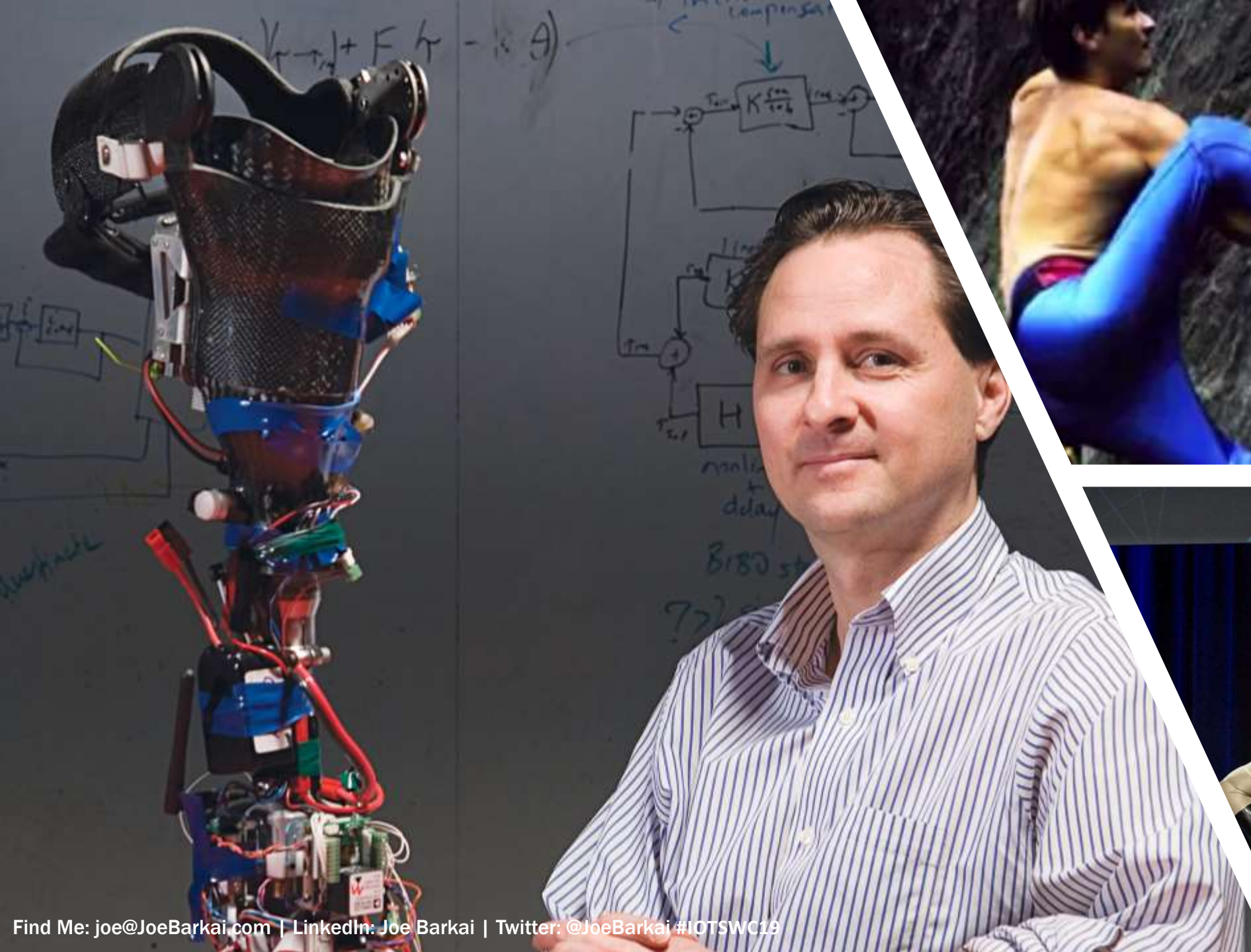
Personalized Medicine

Personalized Medicine

- Specific diagnosis and optimal therapies
- Better antibiotic choices and fewer drug side-effects
- Fighting cancer with patient’s own immune system
- Stopping Alzheimer's, Parkinson's, MS, …
- Diagnosing rare diseases

Brain-Computer Interfaces

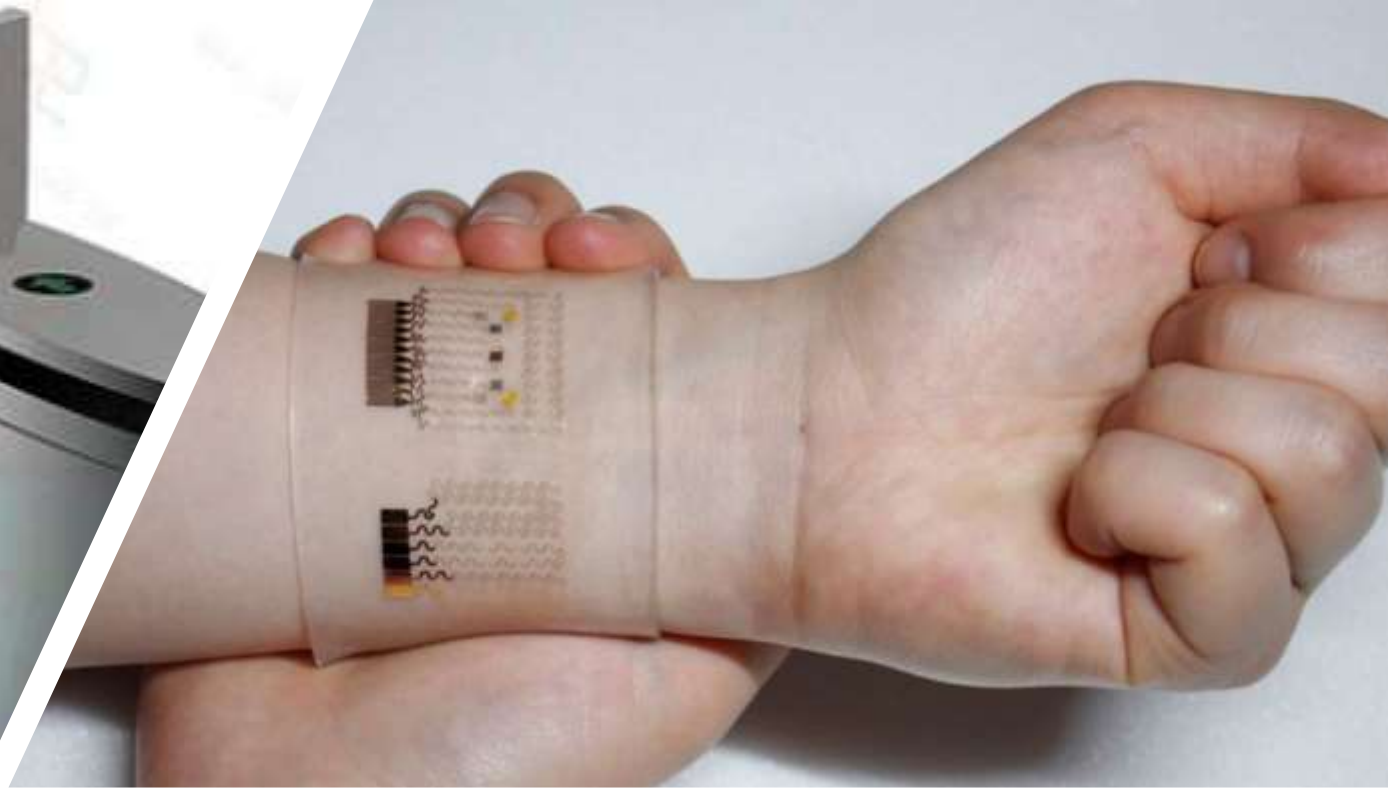
Extreme Bionics



Source: Fujitsu

It’s 2030

Life is Managed by Algorithms!



40%
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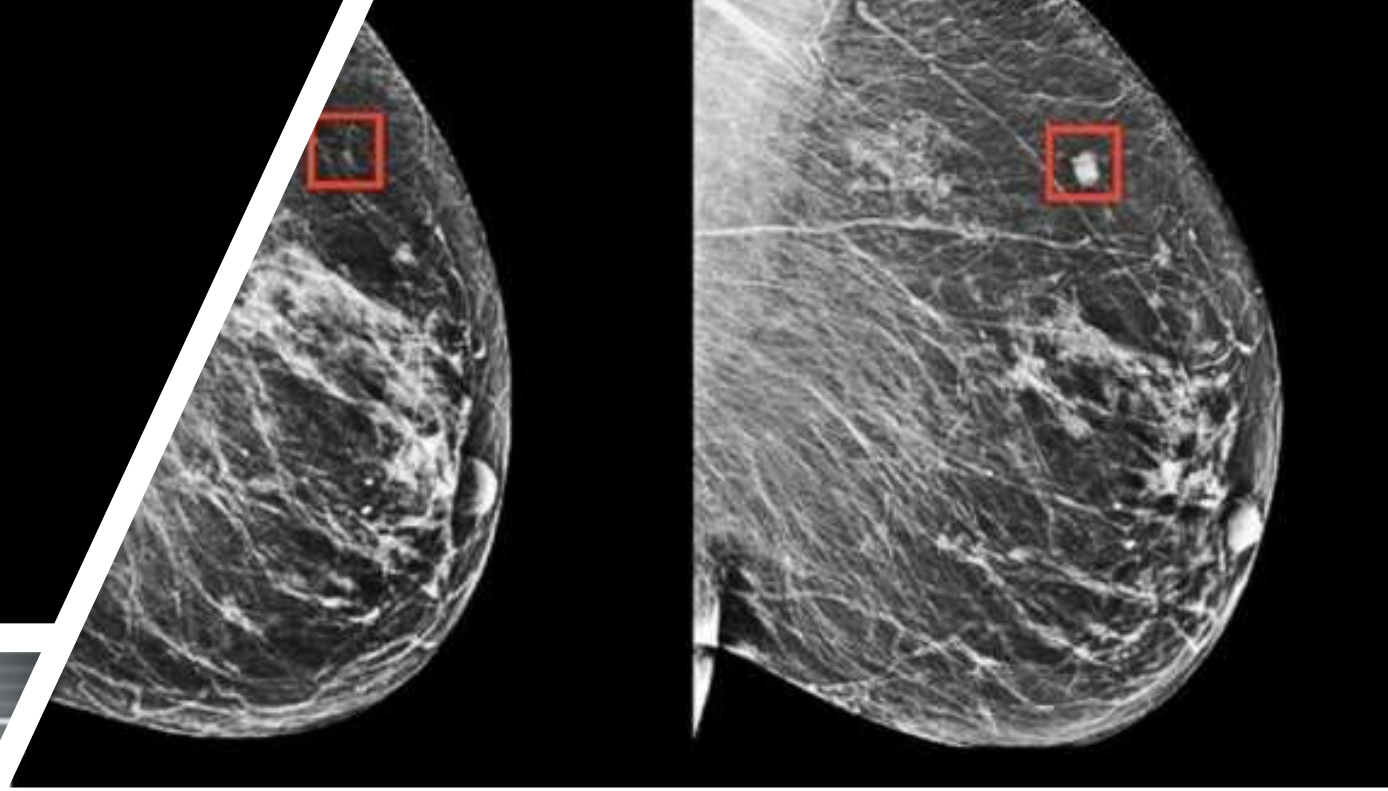
69.8°F
09:37
Network
Camera
ON
37°C
98.6°F
CLOUDY



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ANDREA CANDIAN
01/10/1984
6' 10"
MALE
170
08/04/2012
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ACTIVE
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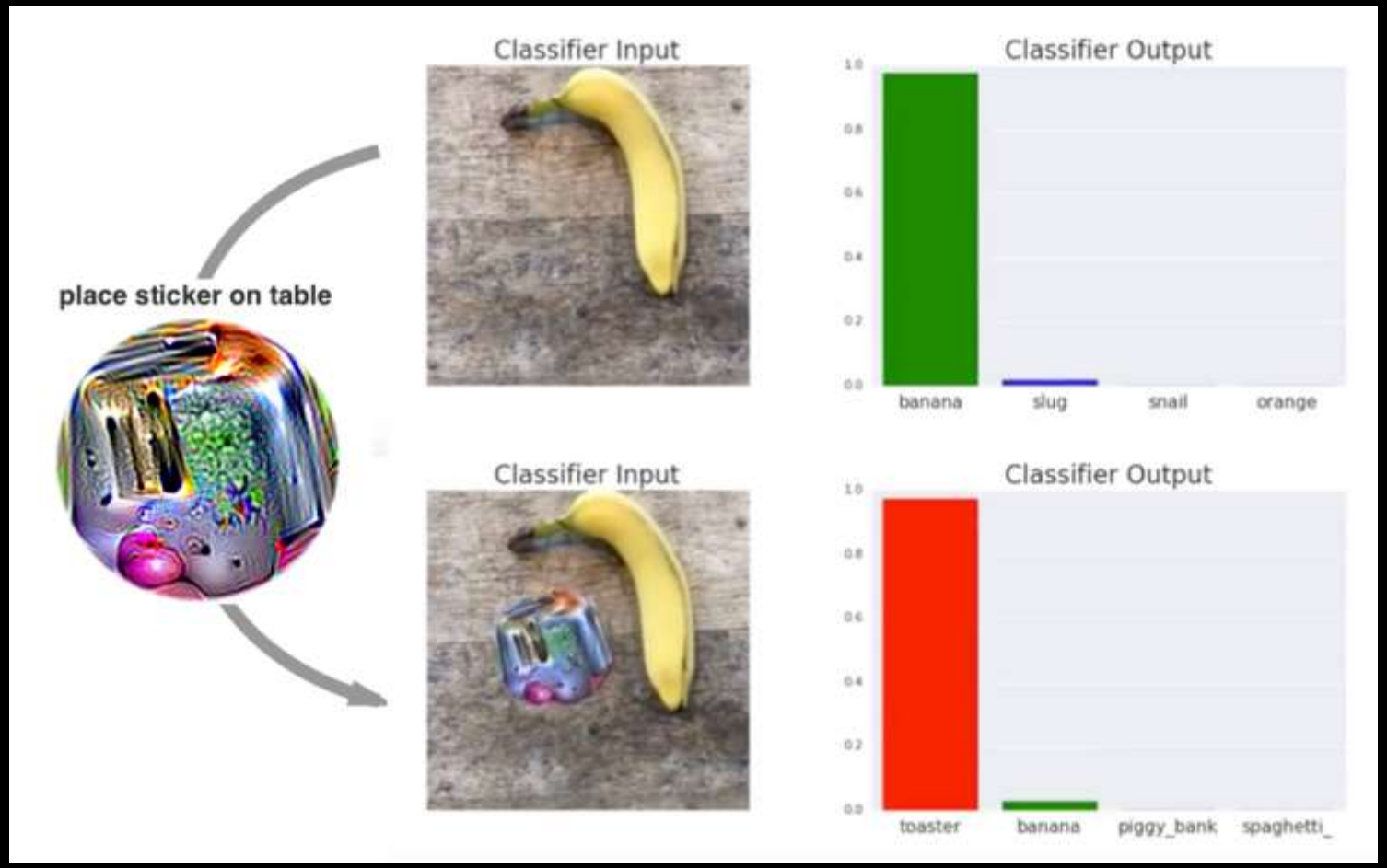
LONDON UK
ENROLLED PHOTO
LAST MATCH
FACIAL RECOGNITION
match 98%
REF NO.

Self-Driving
48



Source: Tom B Brown, et al

Revealing the Invisible

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checkmate

DASHBOARD | EDIT ACCOUNT INFO | LOGOUT

LATANYA SWEENEY
1420 Centre Ave
Pittsburgh, PA 15219
DOB: Oct 27, 1955 (53 years old)

CERTIFIED

- Personal
- Location
- Related Persons
- Marriage / Divorce
- Criminal History
- Licenses
- Sex Offenders

Criminal History

Rate This Content:

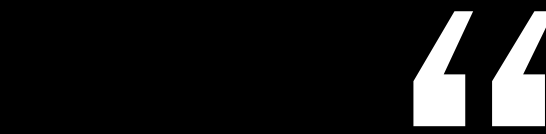
While our database does contain hundreds of millions of arrest records, different counties have different rules regarding what information they will and will not release.

We share with you as much information as we possibly can, but a clean slate here should not be interpreted as a guarantee that Latanya Sweeney has never been arrested; it simply means that we were not able to locate any matching arrest records in the data that is available to us.

Possible Matching Arrest Records

Name	County and State	Offenses	View Details

No matching arrest records were found.



"Humans don't realize how biased they are until AI reproduces the same bias."

John Shawe-Taylor, First AI Chair of UNESCO

“

Vera makes a selection of the most appropriate candidates

Vera can make a perfect selection from job sites or your own database in a few minutes

Vera calls the candidates or answers their calls

Vera screens candidates, gives out vacancy details, asks the necessary questions & answers candidates’ questions

”

Anonymity Frees Us from Accountability

- Deep fake videos
- Voice “skins”

- “Traditional” crime will be lower
- But at cost …
- … and others will increase

Recreating

The Past ...

The Present ...

The Future ...

Needed: An Open Discourse

Between

Engineering community and AI service providers

and

Policymakers, social scientists, legal experts and concerned citizens

- Ethical decision-making
- Algorithmic transparency
- Responsibility and liability
- Employment law and Universal Minimum Income
- Shared best practices
- Standards and common platforms

To Continue the Conversation

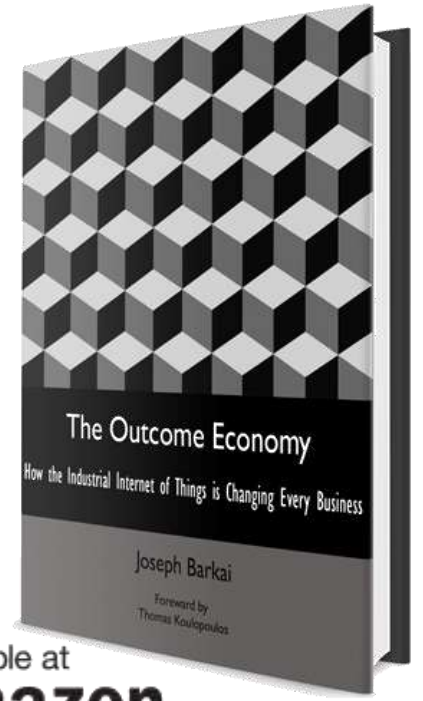
(and request the presentation slides)

joe@JoeBarkai.com

@JoeBarkai

JoeBarkai.com

Joe Barkai



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