




Symposium “Hepatology at Digital Age”

Transforming Healthcare combining Human and Artificial Intelligence: a brief History of Digital Revolution

Thomas ABRAHAMIAN, GE Healthcare

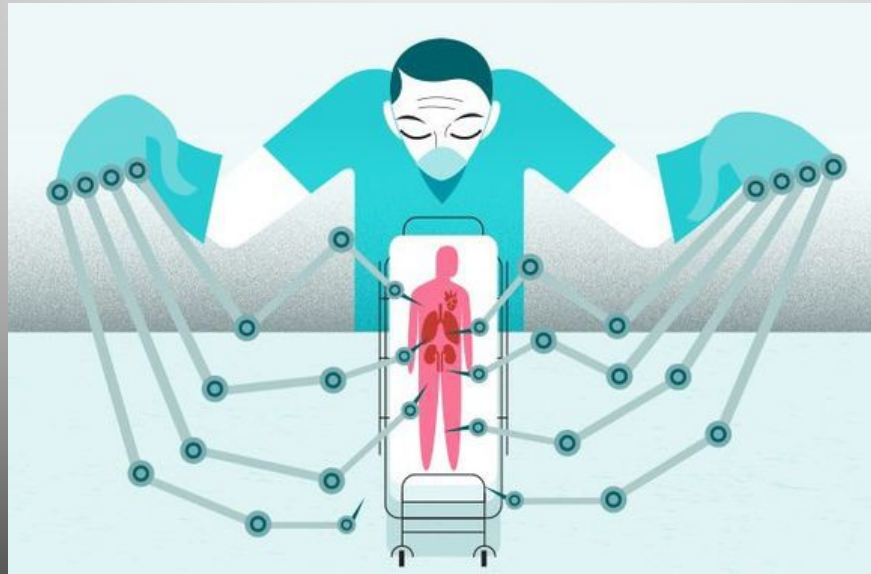


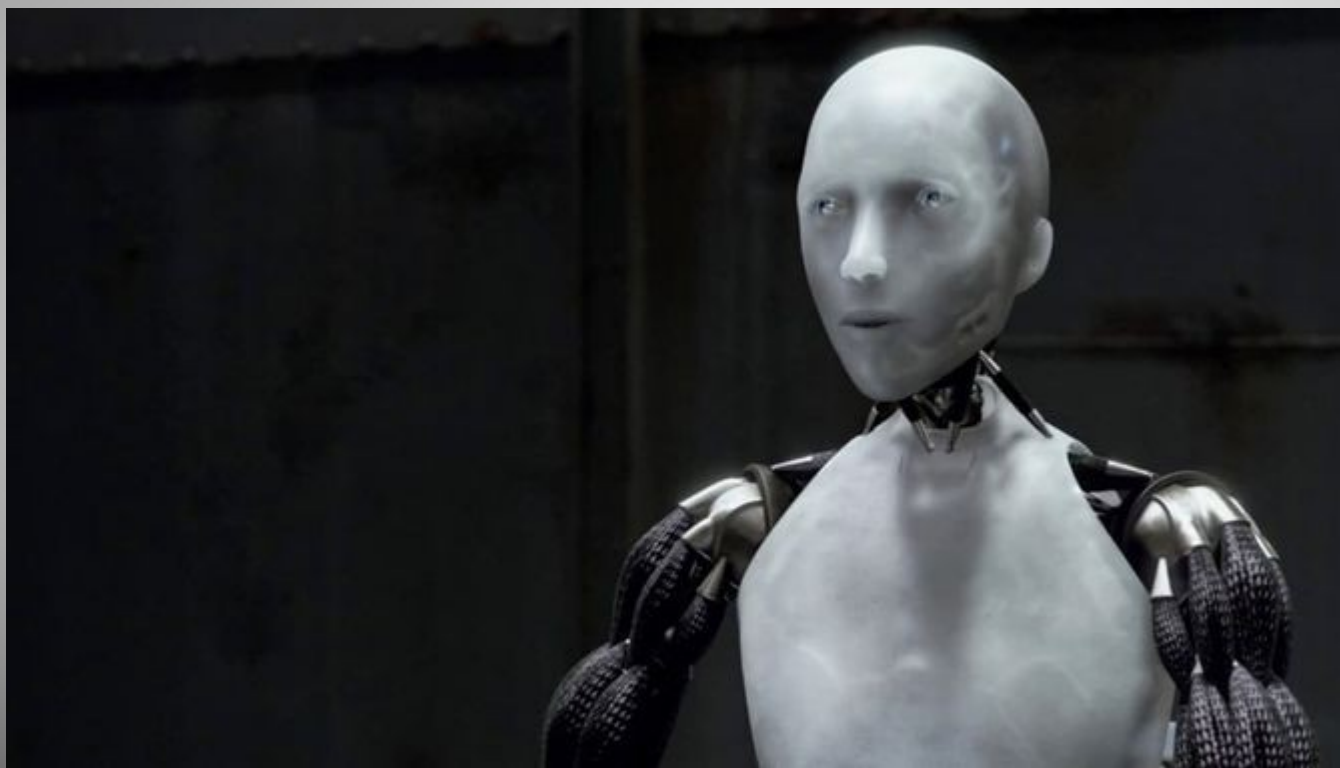
“ If we want to defend our way to deal with privacy, our collective preference for individual freedom versus technological progress, integrity of human beings and human DNA, if you want to manage your own choice of society, your choice of civilization, you have to be able to be an acting part of this AI revolution. ”

Emmanuel MACRON, President of the French Republic



Would you let a machine
decide for your life?



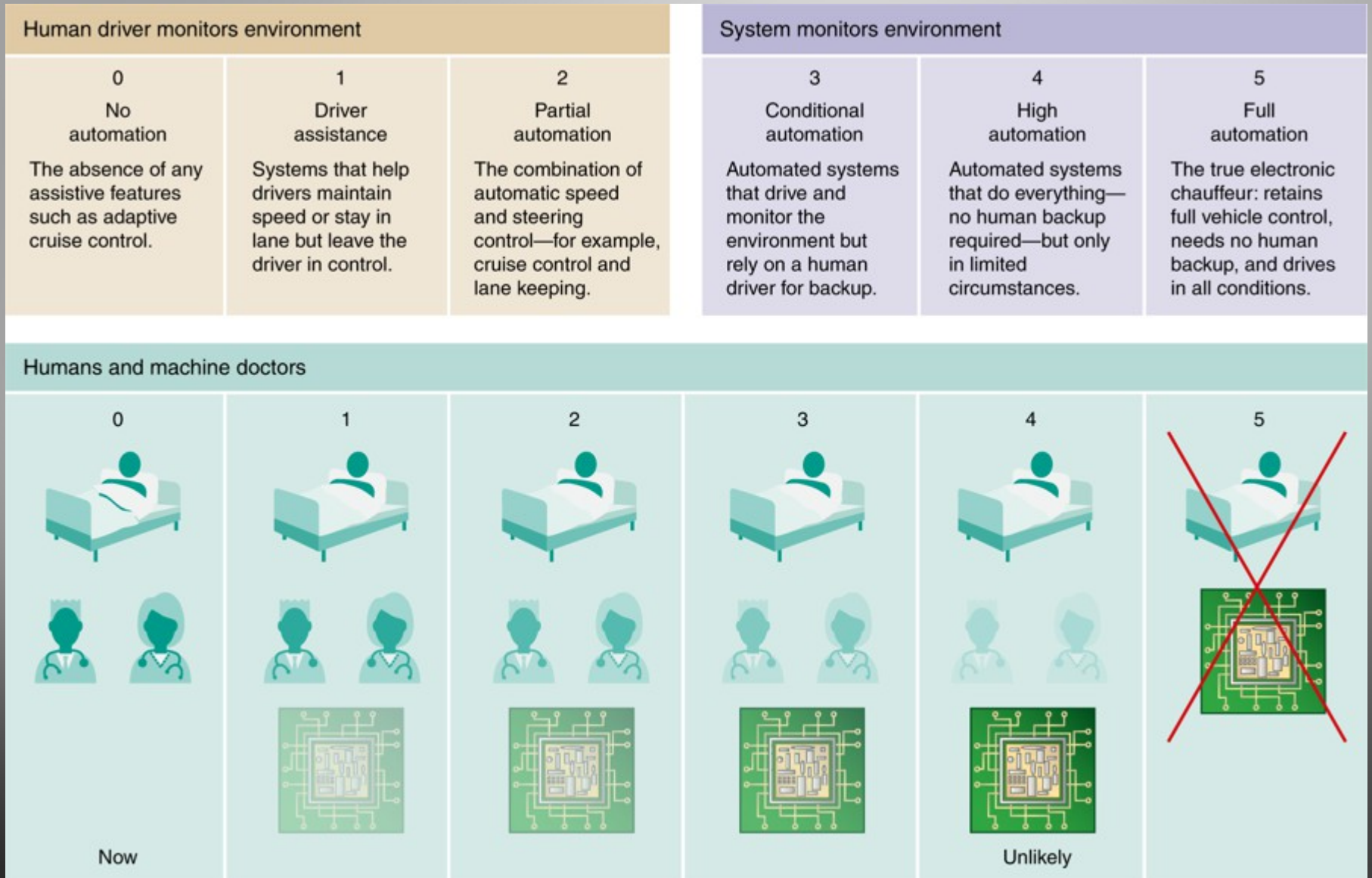


AI Systems exist to augment human intelligence

- Be designed for the benefit, safety and privacy of the patient
- Be a trusted steward of the data and insights
- Be transparent and produce explainable outputs
- Guard against creating or reinforcing bias
- Optimize the safe development, production and compliance of therapeutics and healthcare solutions to deliver Precision Health

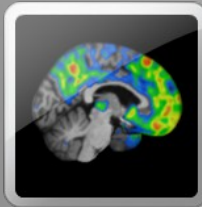
GE Healthcare AI principles

<http://newsroom.gehealthcare.com/ethics-healthcare-arent-new-application-important/>



Digital applications to assist physicians

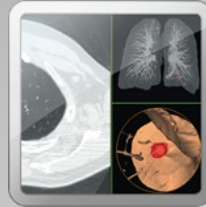
There is already digital intelligence here



CortexID Suite



Virtual Colonoscopy¹



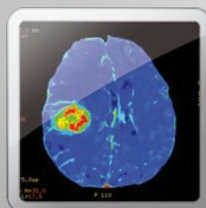
Lung VCAR



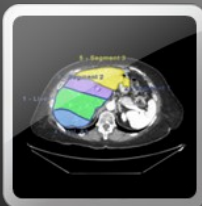
TAVI Analysis



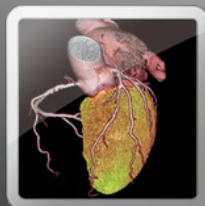
AdvantageSim* MD



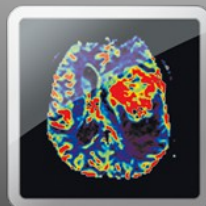
CT Perfusion 4D



HepaticVCAR



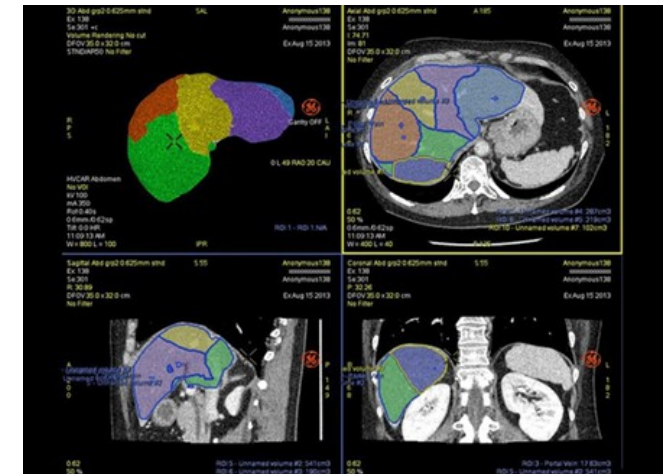
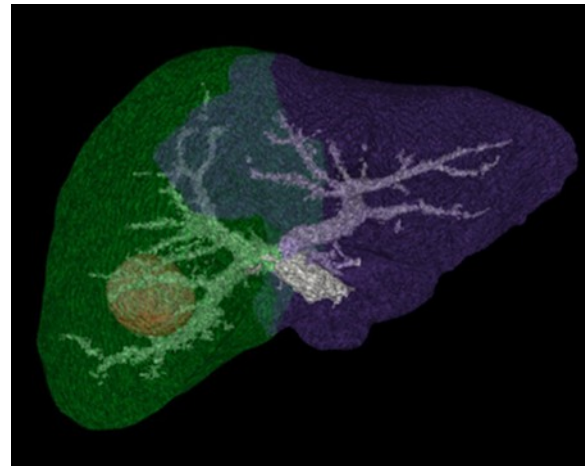
CardIQ Fusion



READYView

HEPATIC VCAR

- Automatic detection of portal venous phase
- Automatic liver segmentation in less than a minute with 100% repeatability
- Intelligent user guided segmentation algorithms to size liver lesions
- Integration with Spectral CT
- Load multi-phase data over multi-time points with lesion comparison functionality



EDISON Intelligence Platform

To unlock Precision Health



What we're building:

- A platform
- Value added applications
- Functionality for GE and vendors to build applications

Key elements of the design:

- Focus on 3 Architecture Control Points
 - Intelligent Device/Edge
 - IT/Radiology/o-Logy
 - Cloud

How we will build it:

- Piggyback on modality and region defined use cases to build platform and services catalogue



Provider/ Consumers



Operator



Users



IT

"I need apps that can help me deliver better care with less variability, more effectively. This requires a marriage of data sources that I can't find anywhere else."

Developers/ Creators



Academics



ISV/Startups



GEH
C

"I need the right tools and access to data to build my killer app. I also need access to channels because I am a start up and cannot afford long sales cycles"

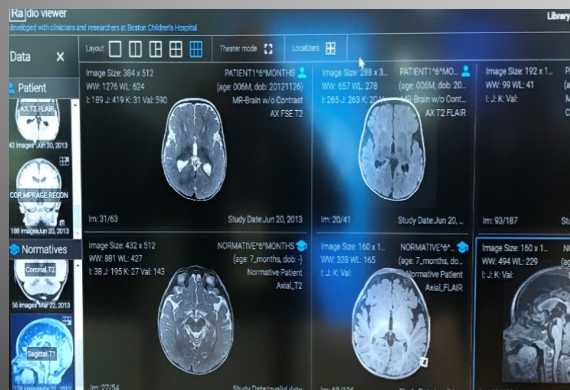
EDISON Intelligence Platform

To unlock Precision Health

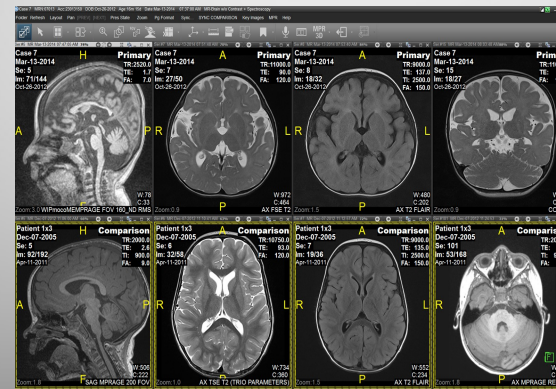


Cloud Application

Standalone, reference data



Integrated PACS App

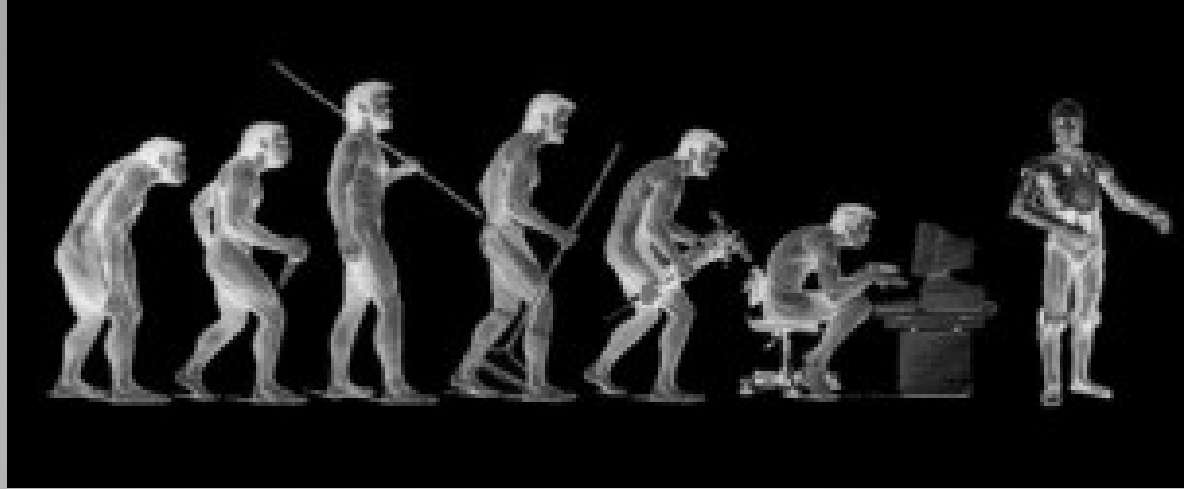


AI/ML Augmentation

current study analyzed and flagged with values outside of normal



EXPANDING MODALITY TYPES & REFERENCE DATA



Thank you for your attention

References

We asked top clinicians what they really think about the future of AI in healthcare. Here's what they said,

<http://newsroom.gehealthcare.com/asked-top-clinicians-about-the-future-ai-healthcare-heres-said-rsna>

Ethics in healthcare aren't new, but their application has never been more important, *Keith Bigelow* on

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High-performance medicine: the convergence of human and artificial intelligence, *Eric J. Topol* on

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A simple guide to AI, Machine Learning and Deep Learning, *Gavin W H Anderson* on

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<https://becominghuman.ai/ai-machine-learning-deep-learning-explained-in-5-minutes-b88b6ee65846>

Six Months Later, France has Formulated their Deep Learning Strategy, *Carlos E. Perez* on

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L'inhumanité des algorithmes en santé, *Damien Mascaret* in *Le Figaro*