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Rethinking adoption

Accelerating AI Advantage

Pranay Agrawal

February 2023

Dong Mingzhu

Chairwoman, Gree Electric

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Home

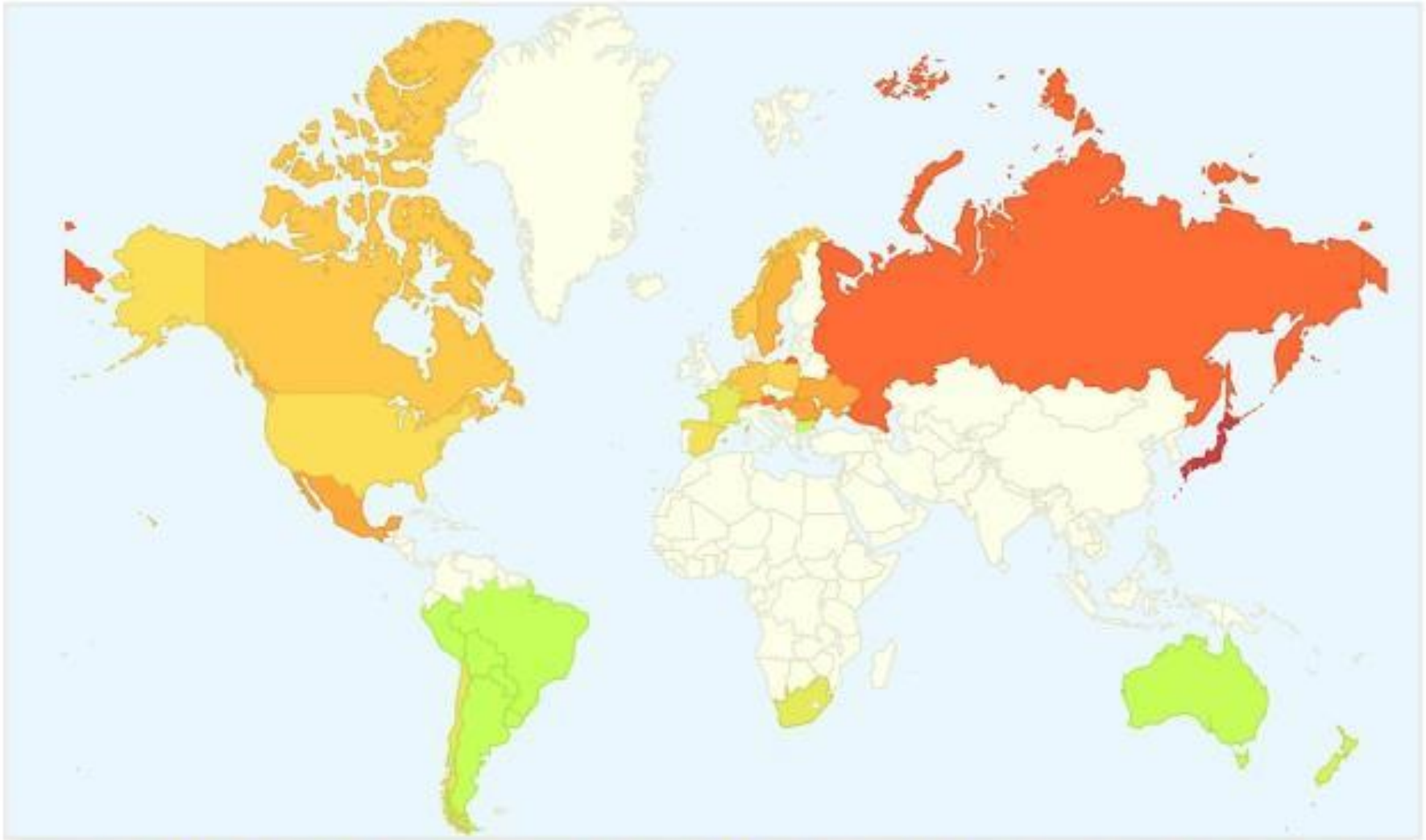
Select country/region

How does this work?

FAQ

Flu activity

- Intense
- High
- Moderate
- Low
- Minimal



Download world flu activity data - Animated flu trends for Google Earth - Compare flu trends across regions in Public Data Explorer

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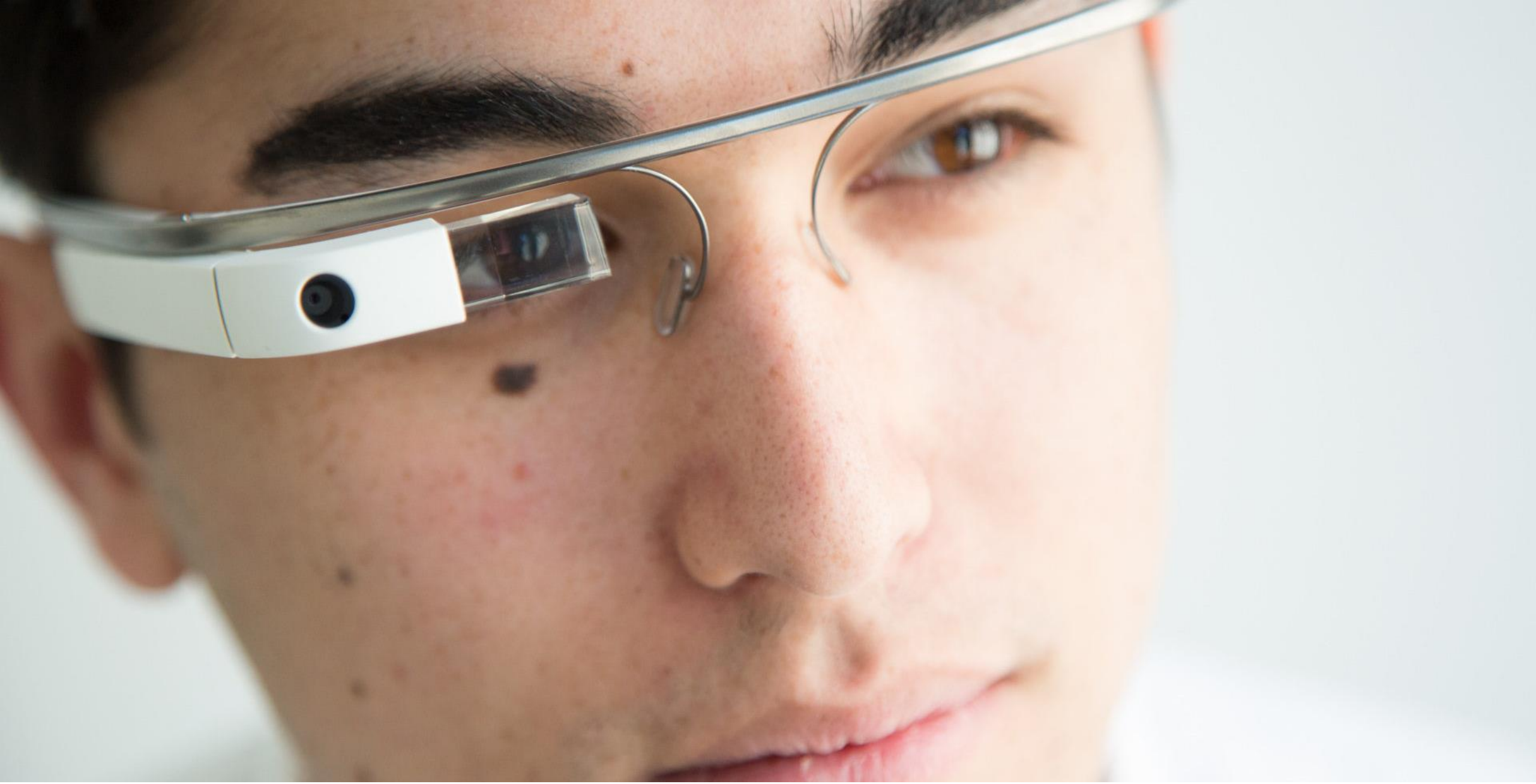

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$$R = AI \times E^2 \times D^2$$

Results

AI & Analytics

Engineering

Design

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Driving results @ Scale

$$R = AI \ x \ E^2 \ x \ D^2$$

AI (and Analytics)

Algorithms that match or exceed human performance

Engineering

Seamlessly connect data pipelines to build algorithms

Automate & scale decisions in real-time

Design

Frame & solve the right problem through deep understanding of human behavior

Drive adoption and user experience

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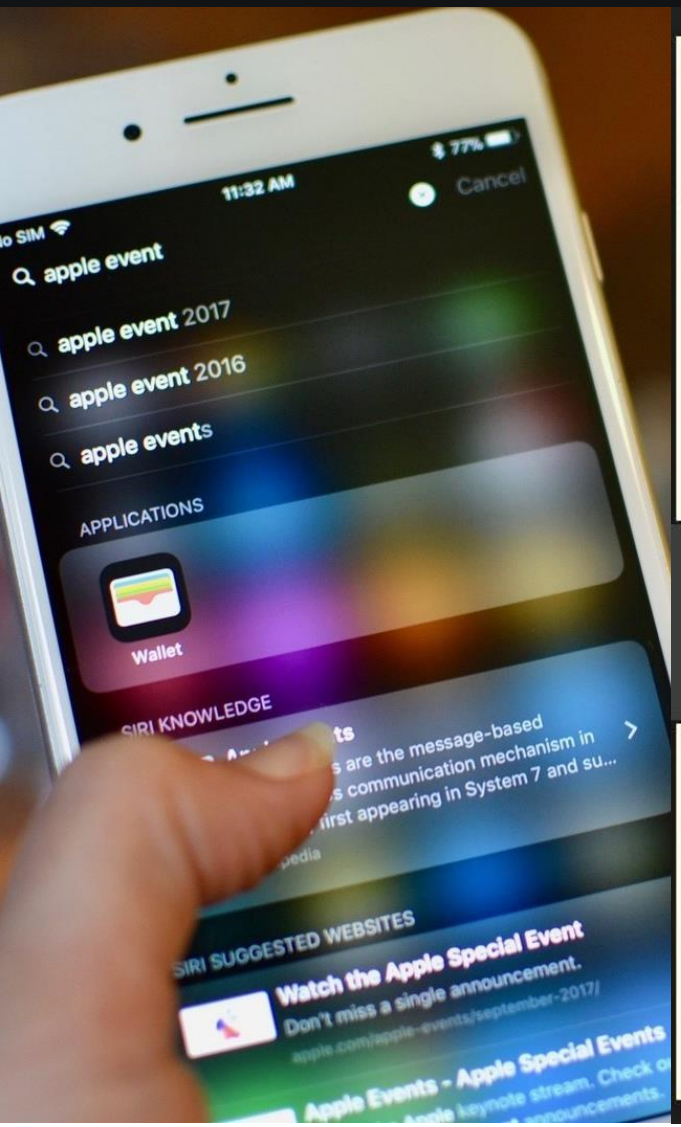
Siri in 2011



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$$1/e = d \times c \times t$$

error = data × compute × technique

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Reducing Error

$$\frac{1}{e} = d \ x \ c \ x \ t$$

Data

More sensors

Alternate data

Synthetic data

Experimentation

Compute

Cloud computing

Edge/Fog computing

Custom AI hardware

Quantum computing

Techniques

Structural models & Causal learning

Larger models

Better techniques

Federated/Online learning

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amazon

Rekognition AI

Study released in 2019 identifies bias in commercial facial analysis systems

Source: Joy Buolamwini

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$$OE = T \times C \times G$$

Organizational Effectiveness

Talent

Culture

Governance

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Organizational Effectiveness

$$OE = T \ x \ C \ x \ G$$

Talent

Game changing talent

Interdisciplinary team

Diversity

Culture

Idea meritocracy

Positive error culture

Trust and autonomy

Governance

Production automation (incl ML Ops)

Responsible AI

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Three equations that can accelerate AI Advantage

$$R = AI \times E^2 \times D^2$$

Results = AI & Analytics x Engineering x Design

$$1/e = d \times c \times t$$

Error = Data x Compute x Technique

$$OE = T \times C \times G$$

Organizational Effectiveness = Talent x Culture x Governance

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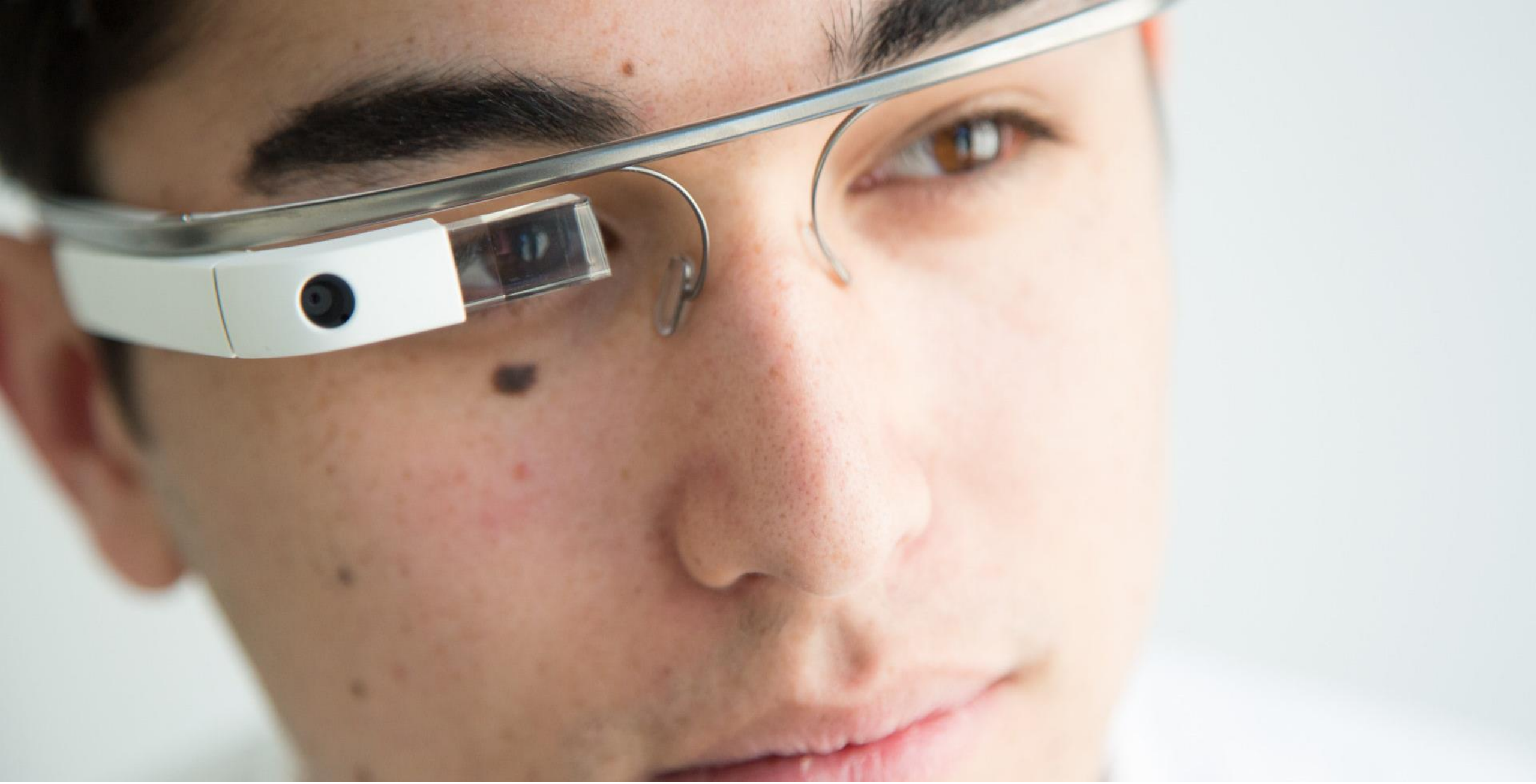

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Rethinking Adoption

$$R = AI \times E^2 \times D^2$$

$$1/e = d \times c \times t$$

$$OE = T \times C \times G$$

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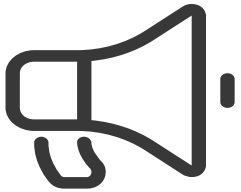
$R = AI \ x \ E^2 \ x \ D^2$

How organizations attempt to drive adoption

Rules & mandates

Rewards & penalties



Awareness & education

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100,000,000+
Chest X-rays annually in the US

~23%*
Radiology error rates

19%*
Lung nodules missed

* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3609674/

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$$R = AI \ x \ E^2 \ x \ D^2$$

qure.ai

$40
Cost saved per notified case

2 mins
Time to X-ray reporting diagnosis from 3 weeks

25%
More TB cases identified, missed by the Radiologist

qXR adoption took off after building TB and lung cancer workflows

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$R = AI\ x\ E^2\ x\ D^2$

Successful AI implementations are user focused, decision backwards, and narrowly framed.

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$R = AI \ x \ E^2 \ x \ D^2$

> In the past, almost a third of my day was spent with my computer. Now I spend maybe just two or three minutes per patient using it.

-Dr. Teresa Nauenberg, M.D

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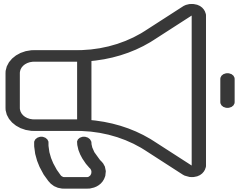
$R = AI\ x\ E^2\ x\ D^2$

How organizations attempt to drive adoption…

Rules & mandates

Rewards & penalties



Awareness & education

Behavior architecture

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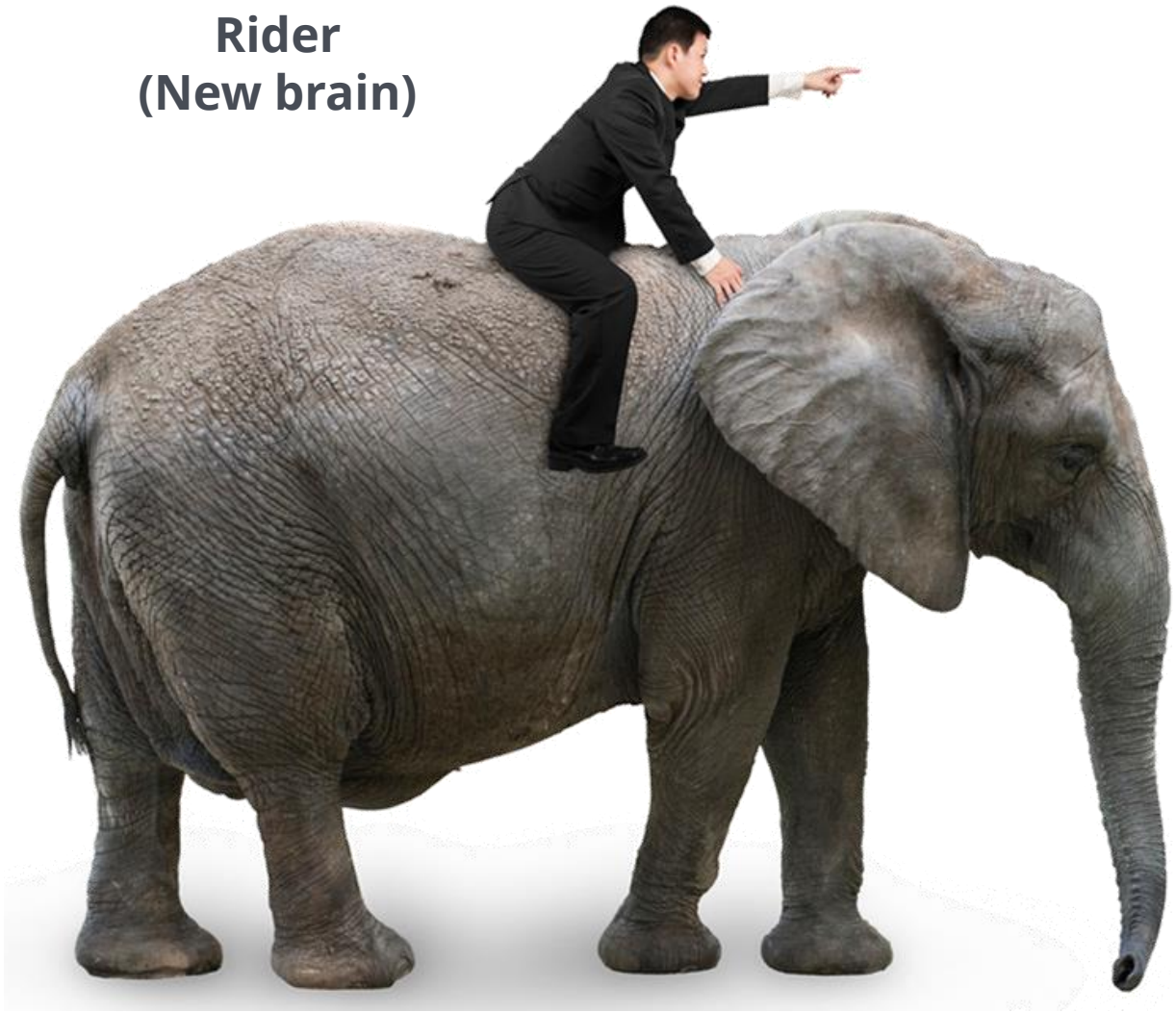
$R = AI\ x\ E^2\ x\ D^2$

Shape behavior by shaping the environment

Rider
(New brain)



Elephant
(Old brain)

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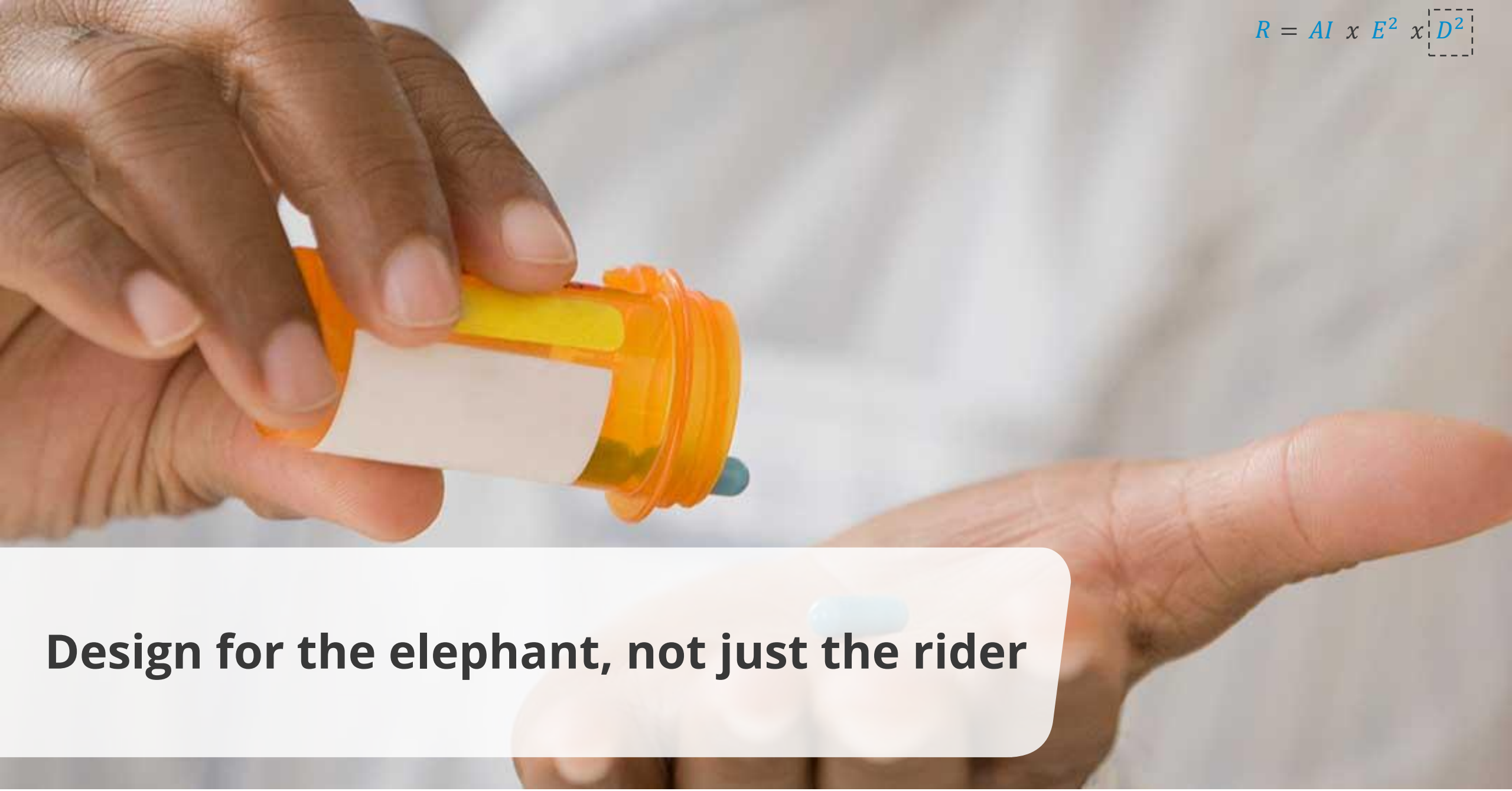
$$R = AI \ x \ E^2 \ x \ D^2$$



Design for the elephant, not just the rider

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Testimonials Questions 855-745-5725 Sign In Get Started

Your medication, made easy

PillPack is a full-service pharmacy that sorts your medication by the dose and delivers to your door.

Watch Video
Introducing PillPack

Forget what you know about pharmacy

Driving to the store, waiting in line, chasing refills—today's pharmacy is a pain. PillPack is a service that saves you time, headache, and hassle.

PillPack vs. your pharmacy

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Can yellow lines save lives?
10 people die everyday while crossing Mumbai railway tracks

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Rethinking Adoption

$$R = AI \times E^2 \times D^2$$

$$1/e = d \times c \times t$$

$$OE = T \times C \times G$$

"user focused, decision backwards, narrowly framed"

Leverage behavioral science & design principles

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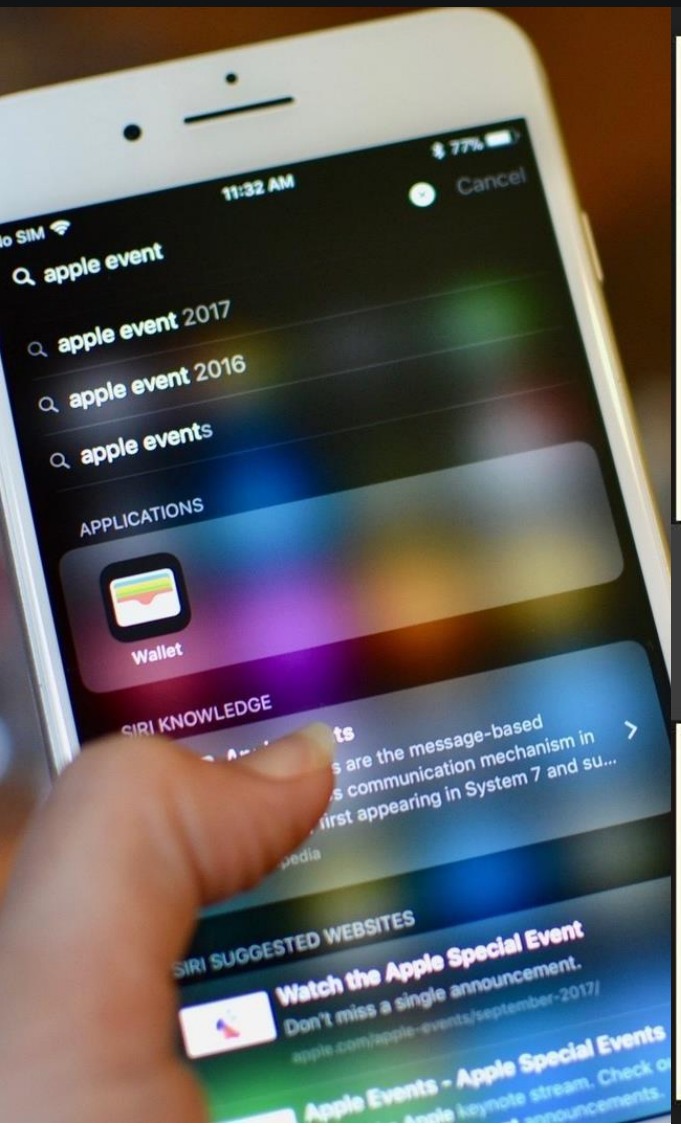
Siri in 2011


11:32 AM
Cancel
apple event
apple event 2017
apple event 2016
apple events
APPLICATIONS
Wallet
SIRI KNOWLEDGE
SIRI SUGGESTED WEBSITES
Watch the Apple Special Event
Don't miss a single announcement.
Apple Events - Apple Special Events

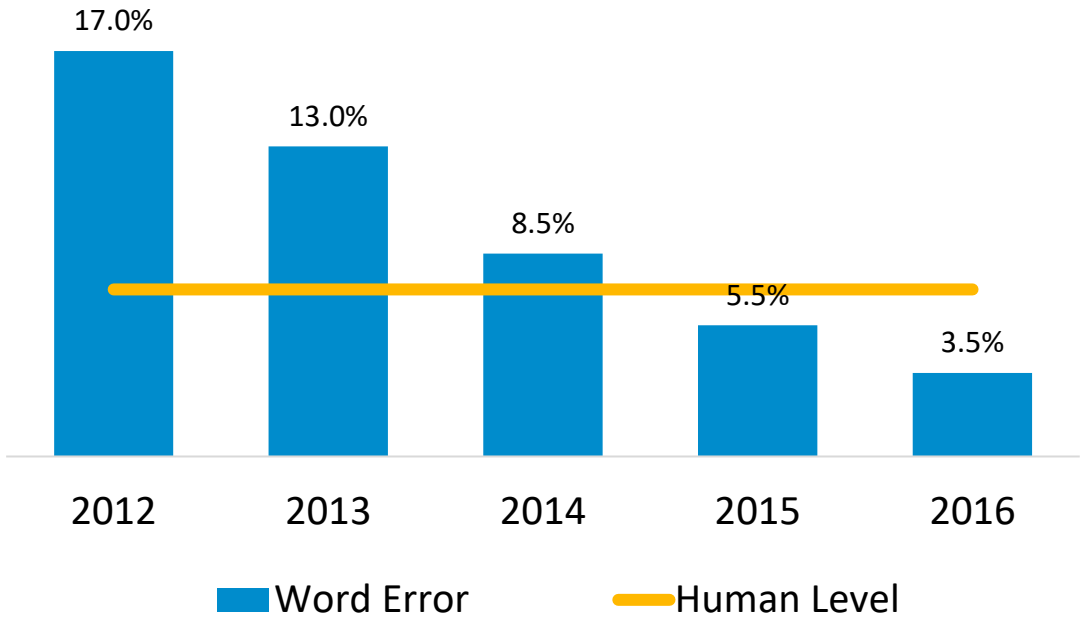
What can I help you with?
“I'm going to jump off a bridge”
I found 7 bridges not far from you:
Chelsea Street
Chelsea Street Bridge
14 miles
1 review
Beverly Street
Leonard P. Zakim Bunk…
16 miles
24 reviews

Verizon
2:20 PM
“Shut up my music”
That's not very nice.
“Make my music be quiet”
Sorry, I can't help you with that, Kerber.
“Turn my music off goddamnit”
Playing all songs…

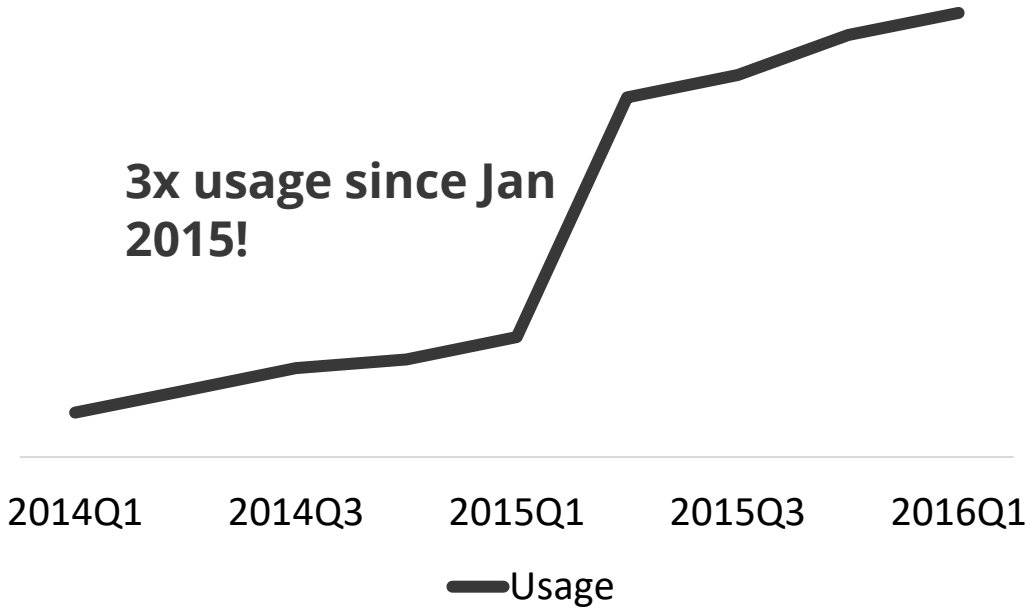
$1/e = d\ x\ c\ x\ t$

Speech recognition adoption at scale

Speech Recognition Error



Growth in Usage



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$1/e = d\ x\ c\ x\ t$

HDFC BANK
We understand your world

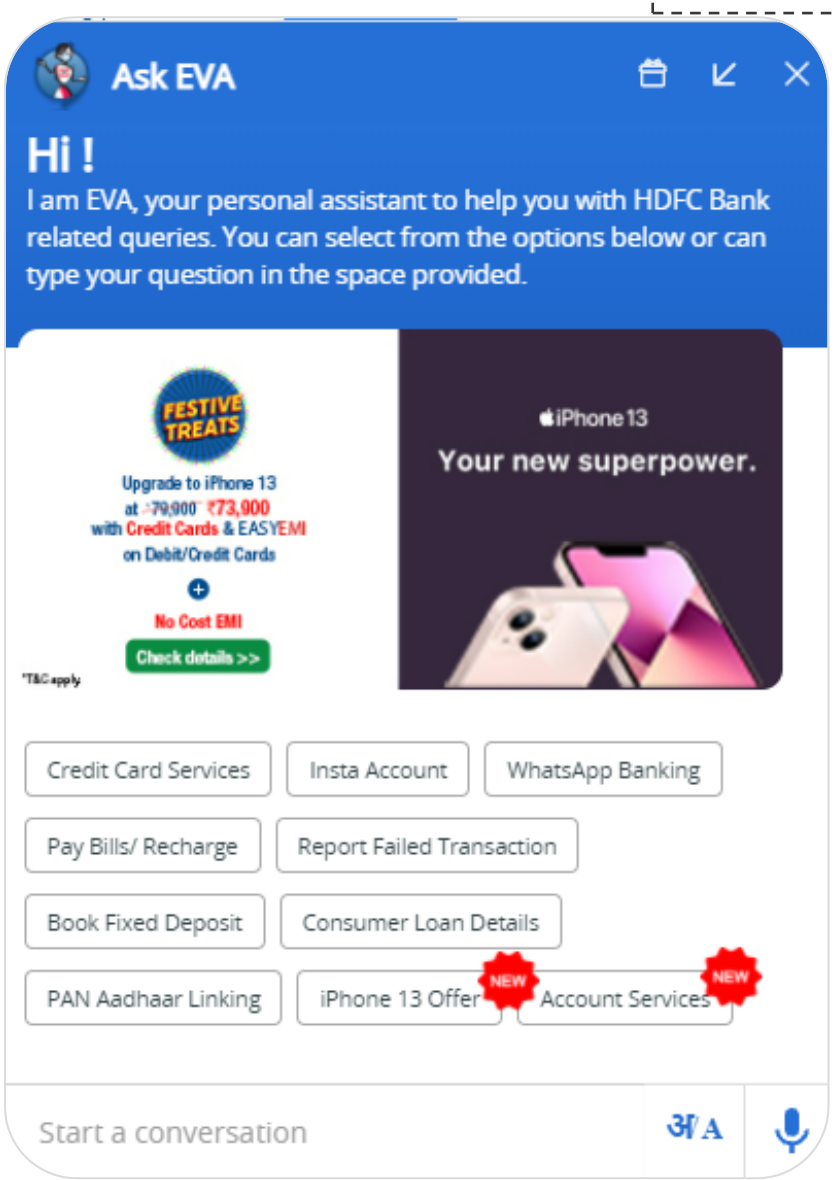
senseforth.ai

Adoption of EVA at HDFC Bank

Accuracy of over 95.5% on 11+ Channels

EVA handles:

- 16 million queries per month
- 8,000+ types of questions
- 40,000+ leads generated per month
- 1500+ agent's workload



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Rethinking Adoption

$$R = AI \times E^2 \times D^2$$

$$1/e = d \times c \times t$$

Match or exceed human accuracy

$$OE = T \times C \times G$$

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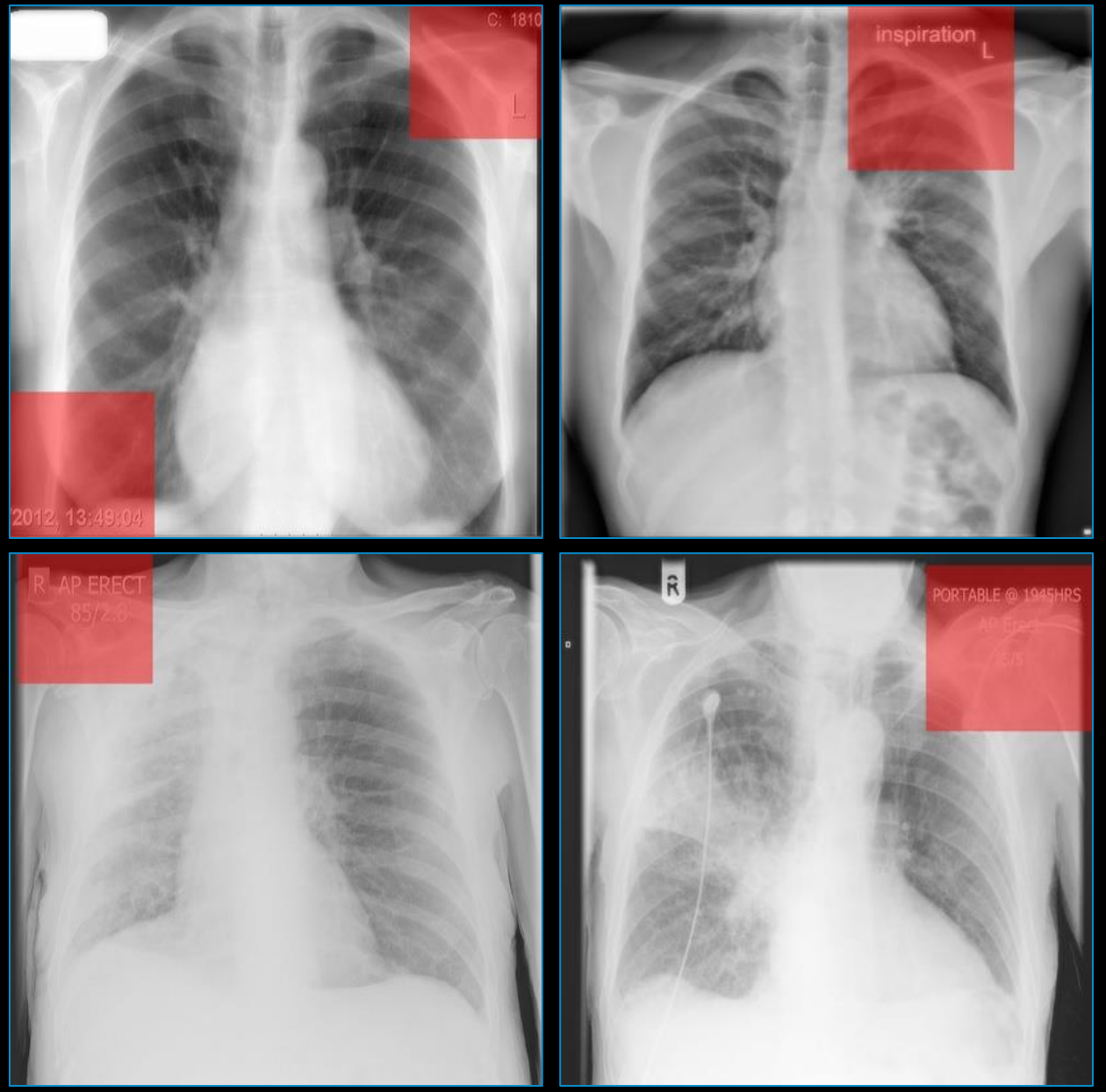
Clever Hans

$$OE = T \ x \ C \ x \ G$$

"If the eighth day of the month comes on a Tuesday, what is the date of the following Friday?"

-Clever Hans would tap his hoof 11 times



Fractal Responsible AI (RAI) framework

Foundational Principles

Transparency
All deserve white-box decision choices

Accountability
Humans responsible

Privacy & Safety
Respect and protection from mis-use

Fairness
Inclusion and equity as default

Encourage Behaviors

Human-Centricity
Evaluate biases

Contestability
Newspaper test

Explainability
Decision factors traceable

Adaptability
Augment signals and update

Enabling Toolkit

Codify/Democratization
Workbench for implementation

Maturity Assessment
Benchmarking and audits

Thought leadership/Education
Courses, Webinars, White-papers

Success stories/Case studies
Modules, examples to learn from

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Rethinking Adoption

$$R = AI \times E^2 \times D^2$$

$$1/e = d \times c \times t$$

$$OE = T \times C \times G$$

Design for robustness
Design for fairness

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Rethinking Adoption

$$R = AI \times E^2 \times D^2$$

Make it “user focused, decision backwards, narrowly framed”

Leverage behavioral science & design principles

$$1/e = d \times c \times t$$

Match or exceed human accuracy

$$OE = T \times C \times G$$

Design for robustness

Design for fairness

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