

Le mythe de la Singularité

Faut-il craindre l'intelligence artificielle?

Jean-Gabriel Ganascia

Équipe ACASA - LIP6 – CNRS (UMR 7606)

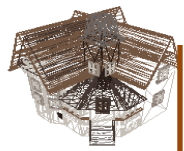
*Université Pierre et Marie Curie – Sorbonne Universités
Institut Universitaire de France*

Président du comité d'éthique du CNRS

4, place Jussieu, 75252 Paris Cedex 05, FRANCE

Jean-Gabriel.Ganascia@lip6.fr

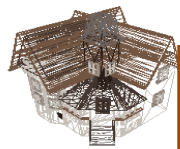




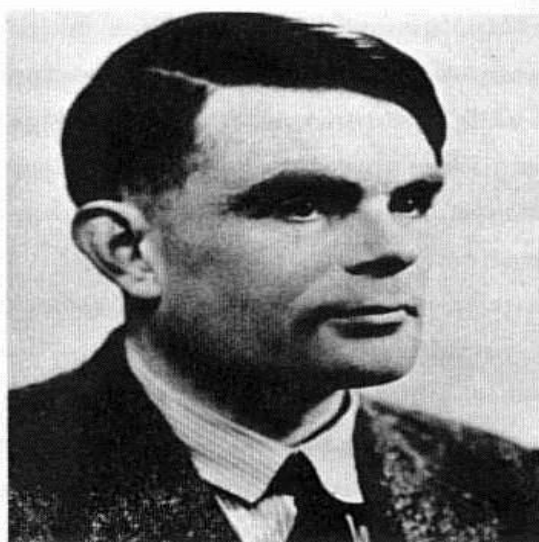
Synoptique

1. Naissance IA
2. L'IA aujourd'hui
3. L'apocalypse
4. Réfutation de la Singularité
5. Quand les peurs masquent les dangers...
 1. Systèmes prédictifs
 2. Agents conversationnels





Une machine peut-elle penser?



VOL. LIX. No. 236.]

[October, 1950

MIND
A QUARTERLY REVIEW
OF
PSYCHOLOGY AND PHILOSOPHY

— 506 —

I.—COMPUTING MACHINERY AND
INTELLIGENCE

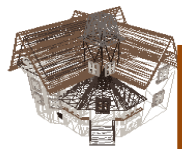
By A. M. TURING

Naissance de l'IA – 1956



École d'été Dartmouth College

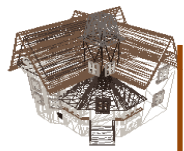
We propose that a 2 month, 10 man study of artificial intelligence be carried out during the summer of 1956 at Dartmouth College in Hanover, New Hampshire. The study is to proceed on the basis of the conjecture that every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it.



En 60 ans, l'IA a transformé le monde

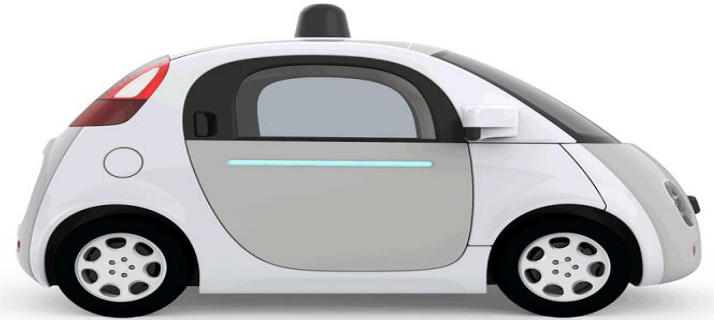
- Réseaux
 - Darpanet, transpac, ...
 - Internet (1972)
- **Hypertexte**
 - Ted Nelson(1965)
- **Web** – couplage Internet/**Hypertext**
 - Tim Berners Lee 1990
 - Moteurs de recherche - Google
- **Web sémantique** – Tim Berners Lee 2004

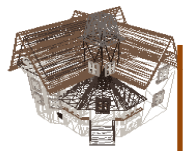




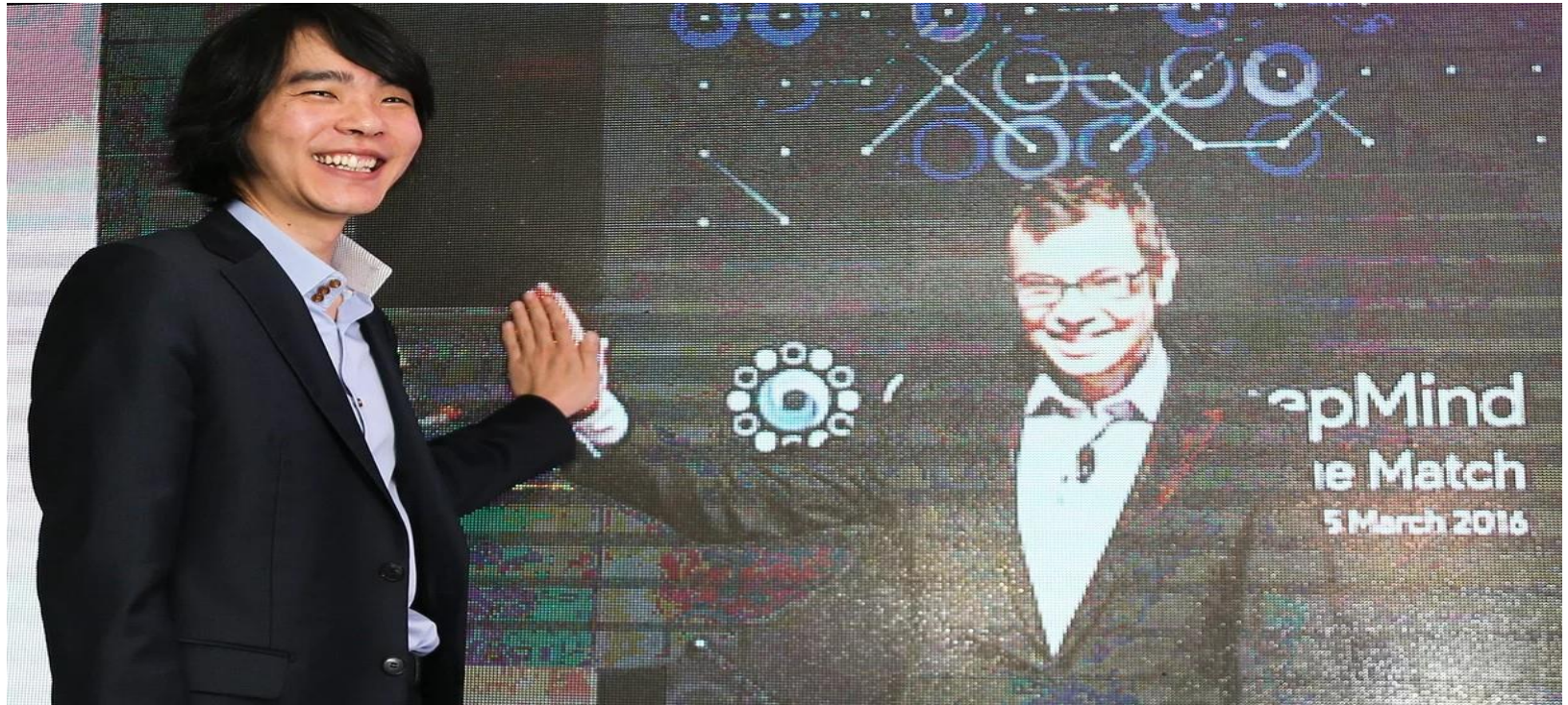
L'IA a changé le monde (suite)

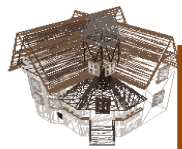
- Robots (et bots)
- Véhicules autonomes
- Biométrie
- Vision
- Reconnaissance de la parole
- Traitement et Compréhension du langage naturel
- e-sciences – expérimentations *in silico*
- ...



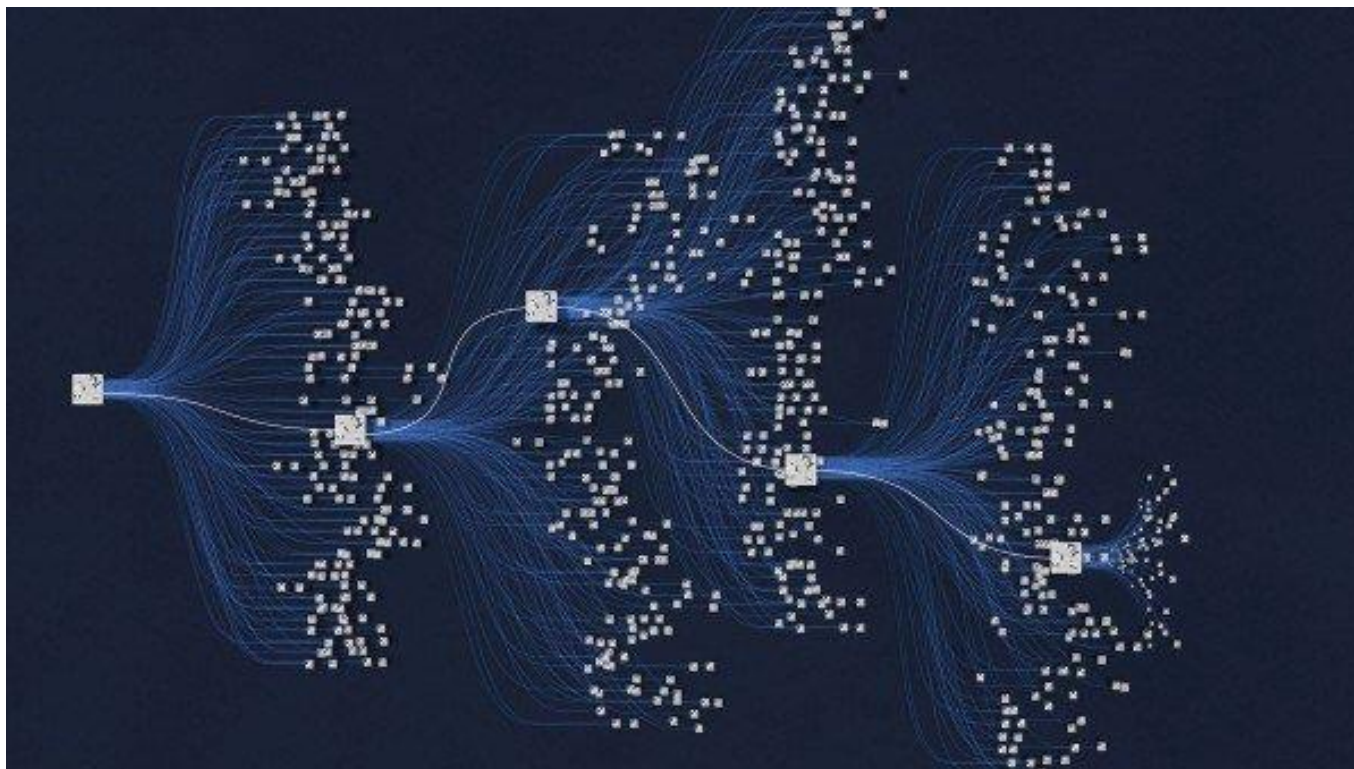


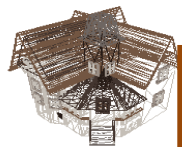
Les jeux: Go – mars 2016





AlphaGo Zero: la machine autistique





Quantité de données - performances

DeepFace: 4.4 millions d'images représentant 1000 images pour 4030 personnes.

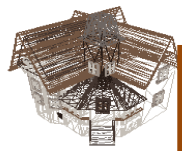
Facenet: 200 millions d'images et 8 millions d'identités uniques

- FaceFirst,
- Face-Six,
- DeepFace (Facebook) 97,25%,
- FaceNet (Google) 99,63%!

Exemples d'images pour 6 identités

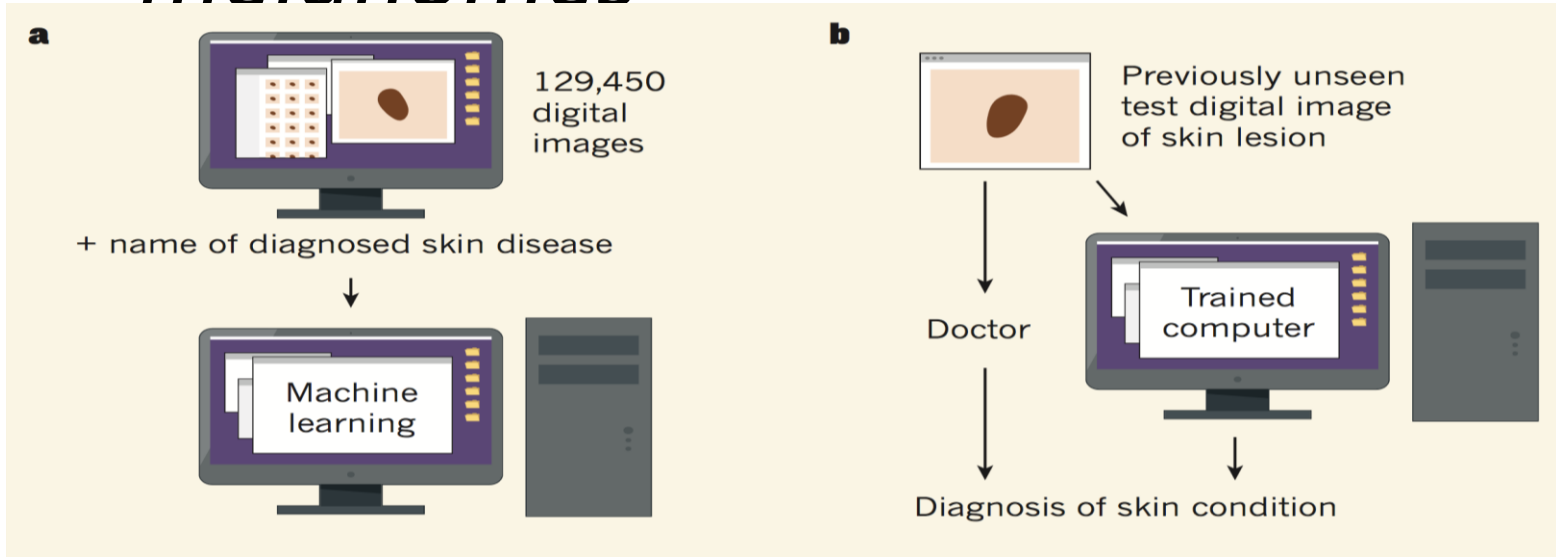
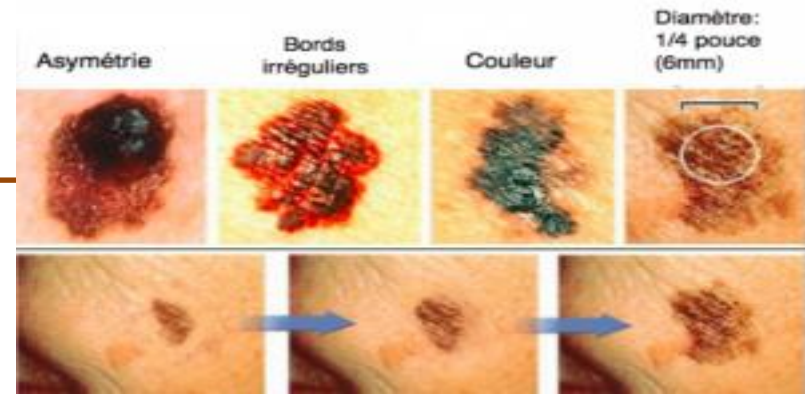


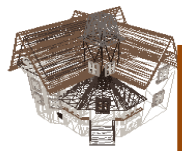
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Automatisation

Ex. diagnostic des mélanomes

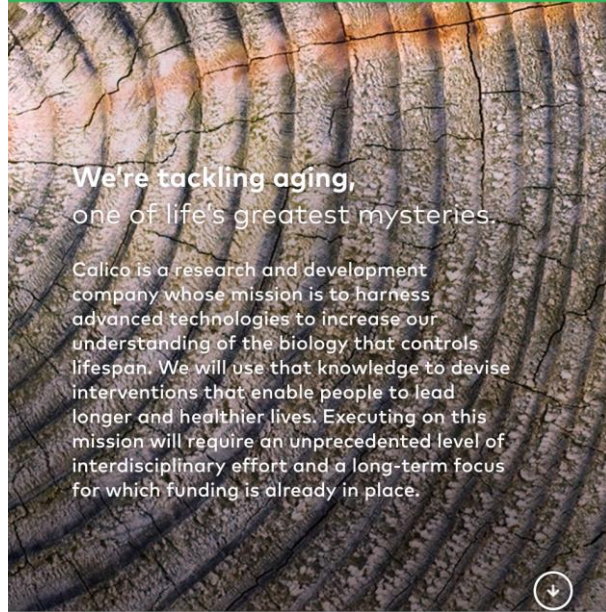




Calico: California Life Company

Calico

TEAM | NEWS | CAREERS | PARTNERING



We're tackling aging,
one of life's greatest mysteries.

Calico is a research and development company whose mission is to harness advanced technologies to increase our understanding of the biology that controls lifespan. We will use that knowledge to devise interventions that enable people to lead longer and healthier lives. Executing on this mission will require an unprecedented level of interdisciplinary effort and a long-term focus for which funding is already in place.

We are scientists from the fields of medicine, drug development, molecular biology, genetics, and computational biology.

Through our research we're aiming to devise interventions that slow aging and counteract age-related diseases.

OUR STARTING TEAM

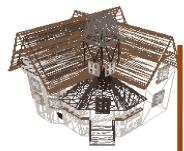
[VIEW MORE →](#)



Arthur Levinson, Ph.D.
Founder & CEO



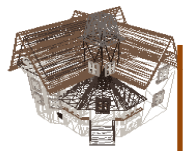
Hal V. Barron, M.D.
President of Research & Development



L'apocalypse - « Ex-Machina »

- Apocalypse: révélation





L'Apocalypse... « révélation »

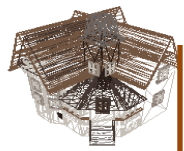
Tribune *The Telegraph* – 1^{er} mai 2014

- Stephen Hawking
- Max Tegmark MIT, physique
- Frank Wilczek MIT (prix Nobel physique)
- Stuart Russel, Berkeley, IA

Arguments: progrès IA *Big Data*

- *Voiture Google*
- *Siri (reconnaissance vocale)*
- *Watson, ...*

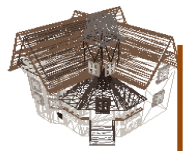




L'Apocalypse

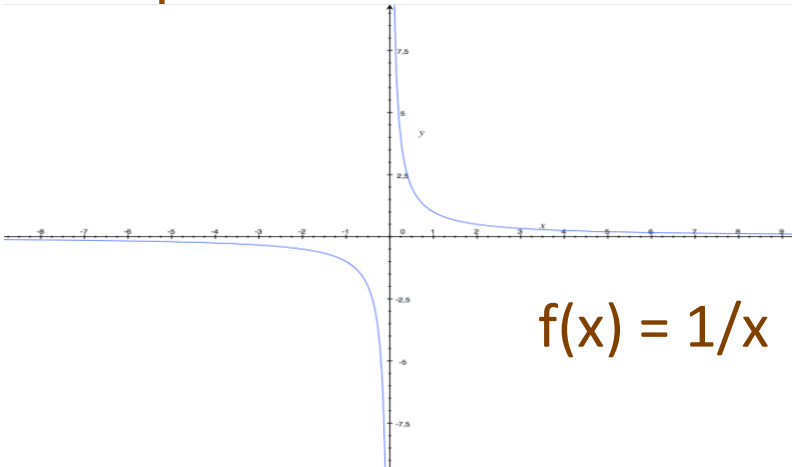
- *“Whereas the short-term impact of AI depends on who controls it, the long-term impact depends on whether it can be controlled at all.” Stephen Hawking*
1er mai 2014



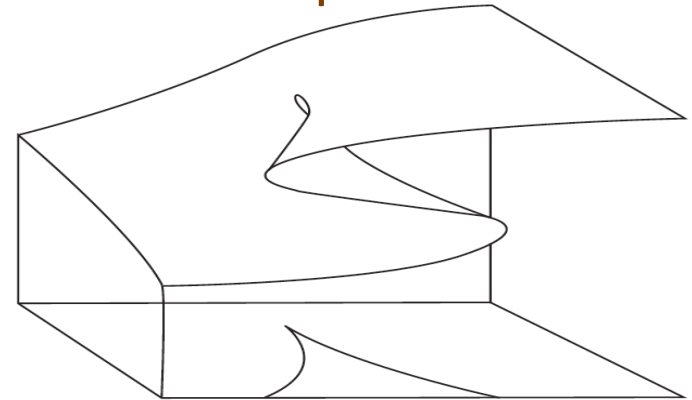


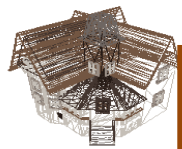
La Singularité technologique

- Révélation d'une Singularité au sens mathématique employé dans la théorie des catastrophe (R. Thom)

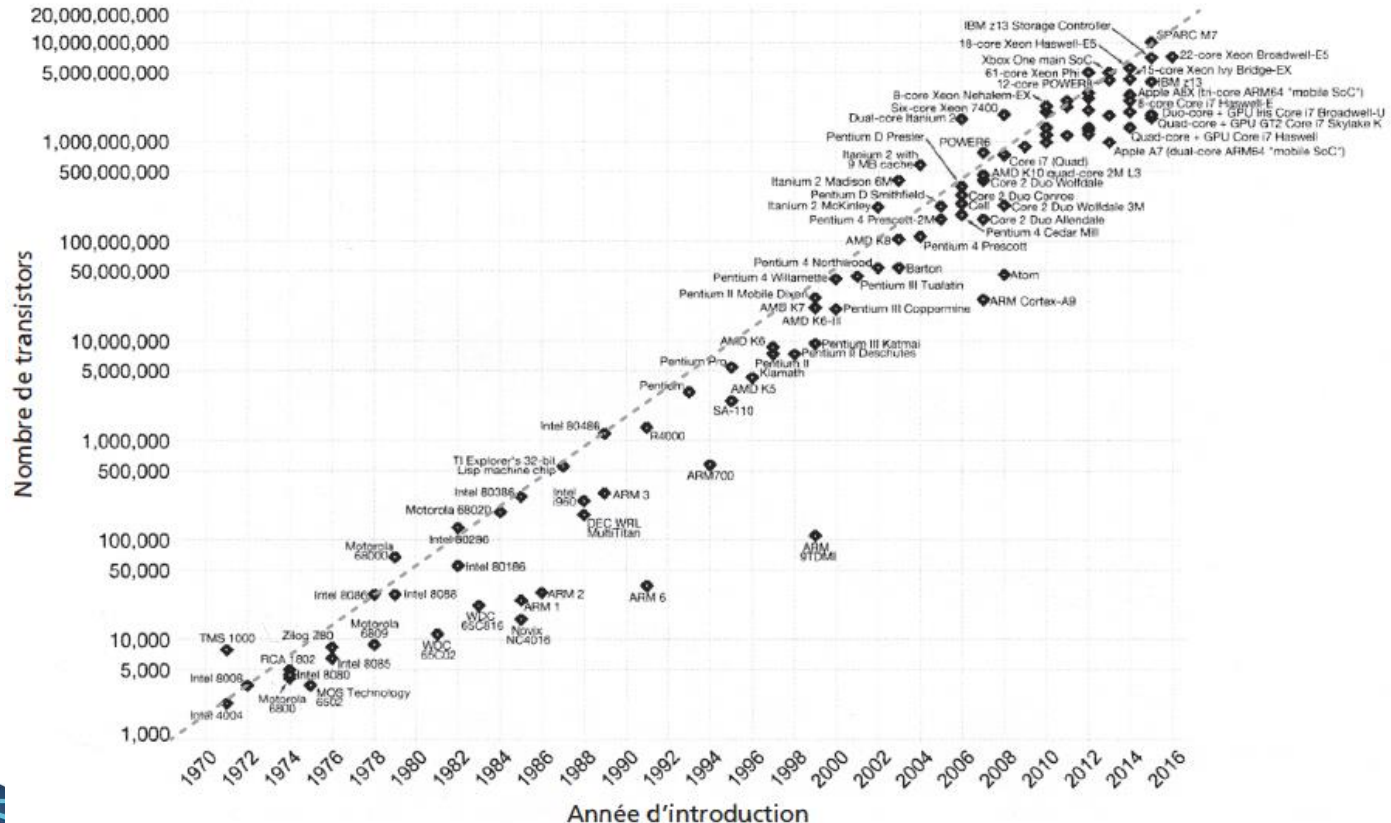


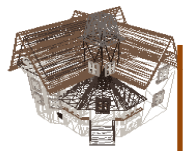
Catastrophe: la fronce



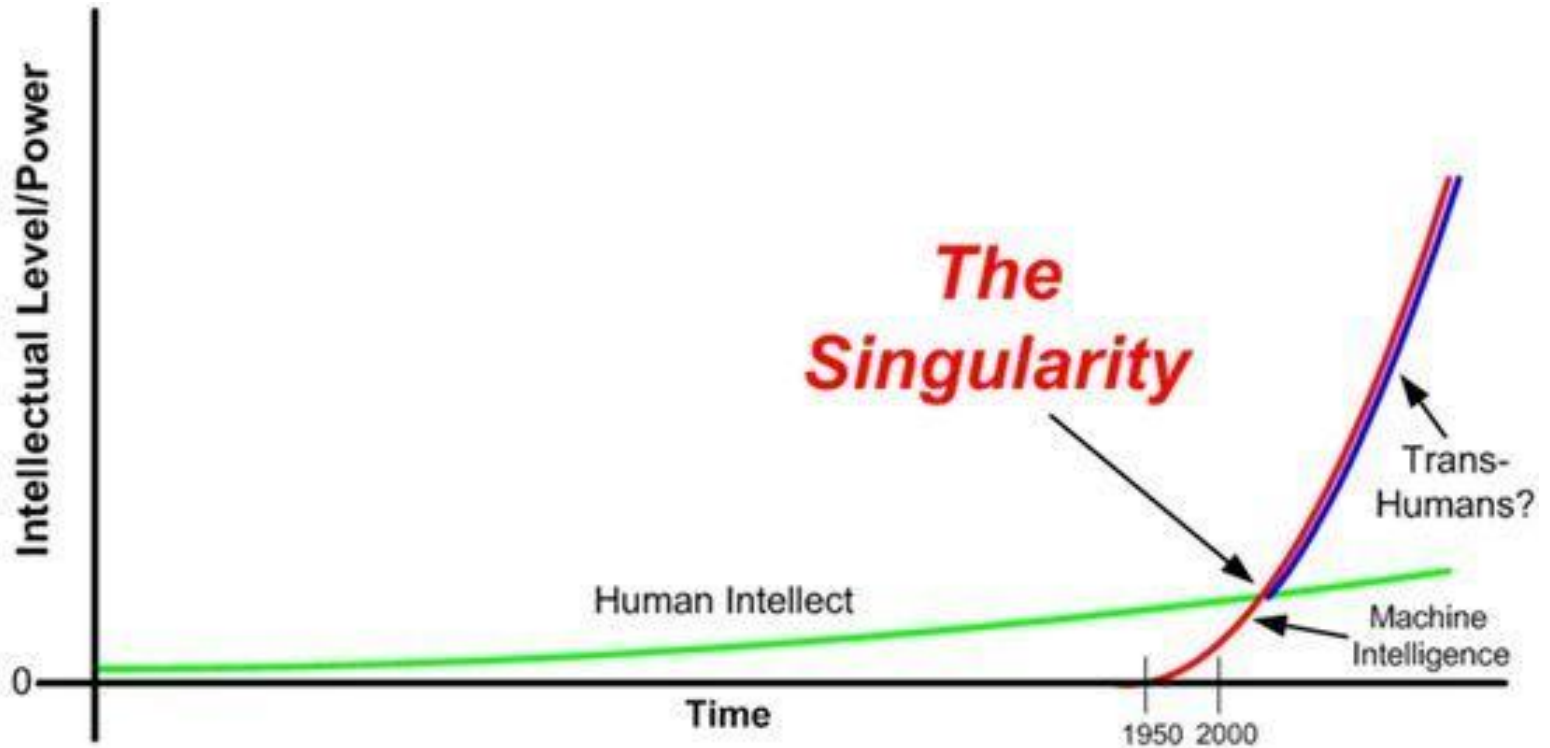


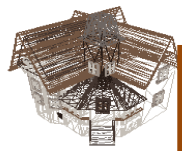
La loi de Moore





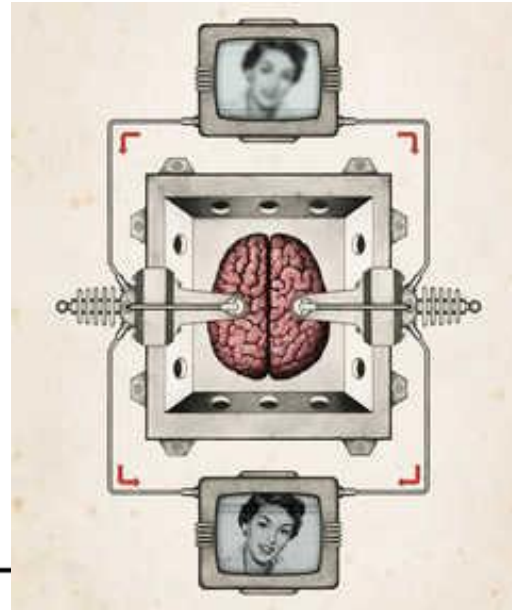
La Singularité technologique





Implants – stimulation cérébrale

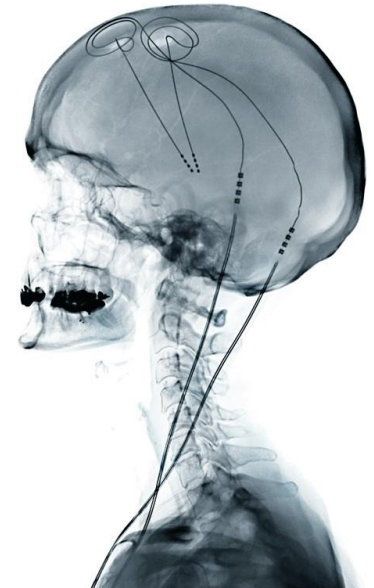
**MIT
Technology
Review**

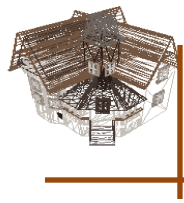


**Work Begins on Brain Stimulator to Correct
Memory**

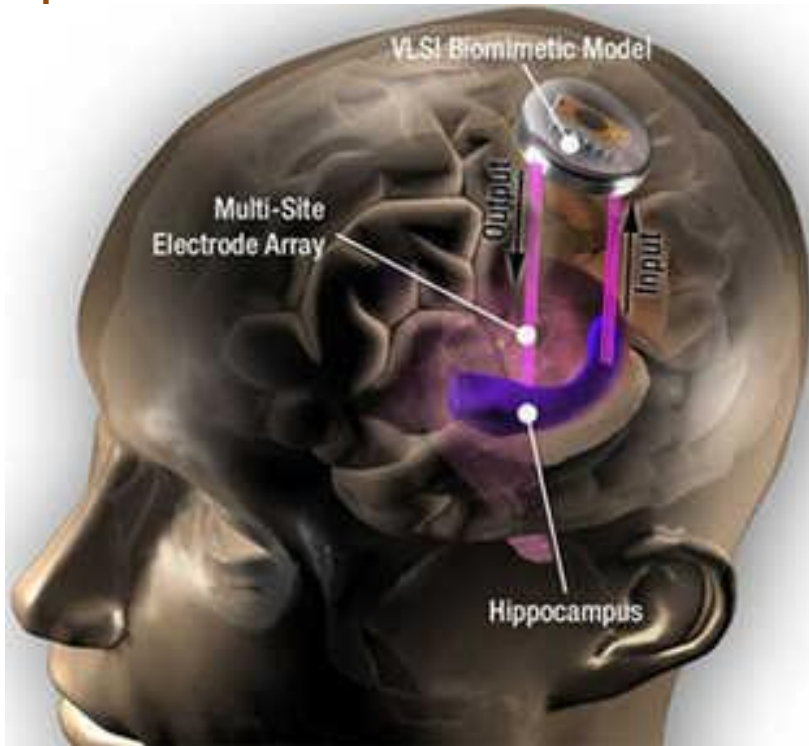
Can deep brain stimulation affect how well and what we remember?

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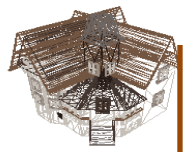




Stimulation hippocampe



- Modèle biomimétique de l'activité de la mémoire (encodage)
 - Stimulation
- Soin de troubles post-traumatiques
- Travaux financée par la *DARPA* –
Jose Carmena U. Berkeley



L'homme bionique



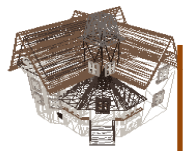
Elon Musk – Mars 2017

- lancement société Neuralink
- Développement implants cérébraux
 - Temps 1: visée thérapeutique
 - Plus tard: augmentation mémoire et intelligence...



Homme symbiotique!





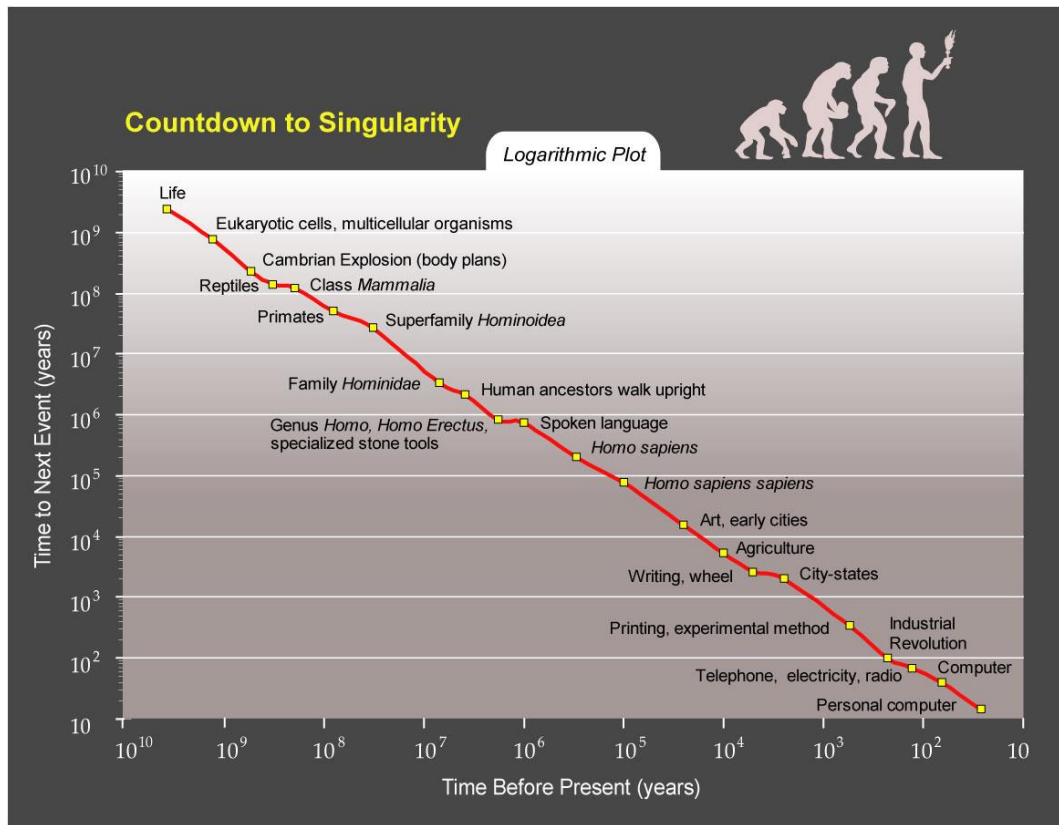
« Mind Uploading »



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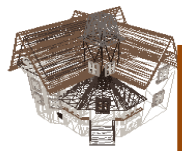
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Téléchargement de la conscience R. Kurzweil



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De la Singularité au transhumanisme

Google Agenda 2045 Initiative Jean-Gabriel

2045.com

Applications DMKM Dictionnaires Google Agenda Page J-GG Master IAD Courriel LIP6 Crédit Mutuel LOCUPLETO Cybernity Autres favoris

2045 Strategic Social Initiative

RUS / ENG

enrollment **37815** MEMBERS

+ Join us

Twitter Facebook

immortality button

Click this button to start the development of your personalized immortal avatar

experts / ideology / faq / technology / interfaith dialog / discussion / press / rebrain / about us / make a donation

#3 Avatar Technology Digest / Bionic hand, BioMicroRobot, 3D-printed bionic ants etc.

Welcome to #3 Avatar Technology Digest. And here are the top stories of the last week. As always we start our Digest with incredible news on Technology, Medical Cybernetics and Artificial Intelligence.

Global Future 2045
New York, June 15-16, 2013

TOWARDS A NEW STRATEGY FOR HUMAN EVOLUTION

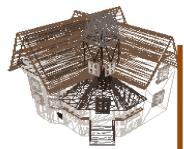
The second international Global Future 2045 congress focused on discussion of a new evolutionary strategy for humanity aimed at overcoming the 21st century's civilization challenges.

02.04.2015

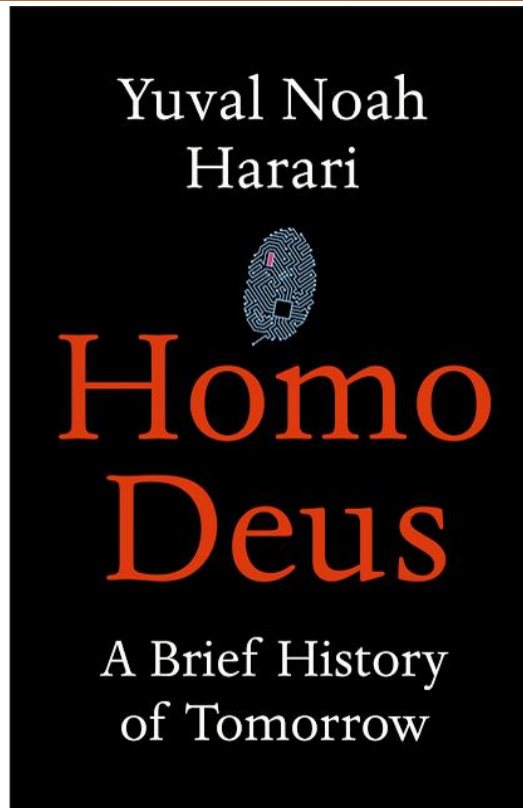
The path to neo-humanity

2045 AVATAR PROJECT MILESTONES

lunettes.jpeg trou noir artistique.jpeg trou noir 2.jpeg trou noir.jpeg Tout afficher

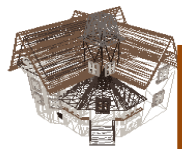


Homo Deus

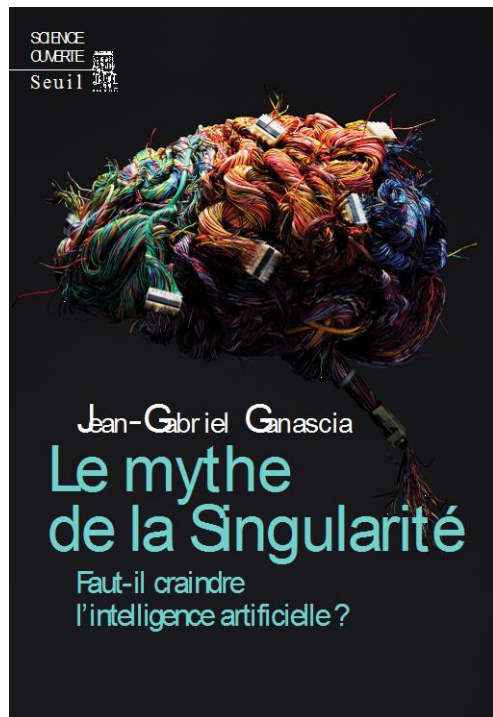


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Réfutation de la Singularité technologique



- Accélération exponentielle de la technologie (Loi de Moore)
 - Fin loi de Moore
 - Fréquence de calcul \neq conscience
- Autonomie des machines: apprentissage et *big data*
 - *Limité à apprentissage supervisé*
 - *Question des changements de paradigmes*
- Les « pompiers-pyromanes »



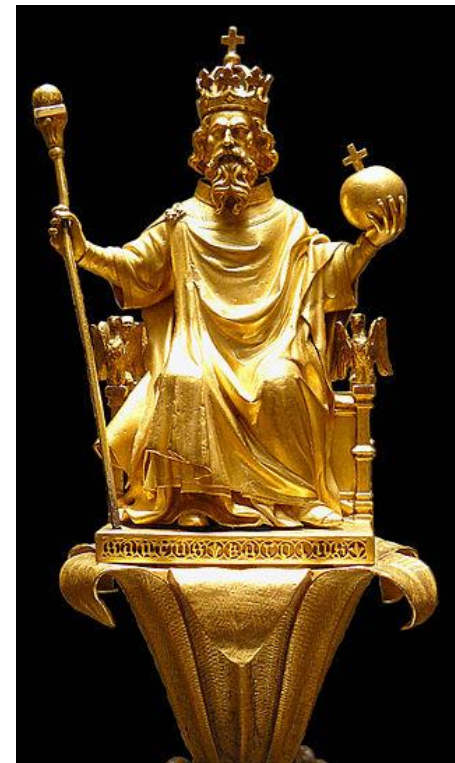
Enjeux politiques: fin de la souveraineté des États

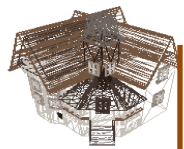
Prérogatives régaliennes des Etats

- Défense
 - Cyber-sécurité (acquisition de protection et d'armes offensives par les grands groupes...)
- Sécurité intérieure
 - Reconnaissance faciale
 - État civil – réseaux sociaux (formulaire ESTA)
 - Traitement masses de données - Palantir
- Finance
 - Battre monnaie – Paypal, Bitcoin
 - Percevoir l'impôt: cadastre (Google)
- Justice
 - Utilisation des masses de données pour prévoir les récidives (US)
 - Site <https://crowdlaw.org/>: législation participative

Autre attributs de la souveraineté

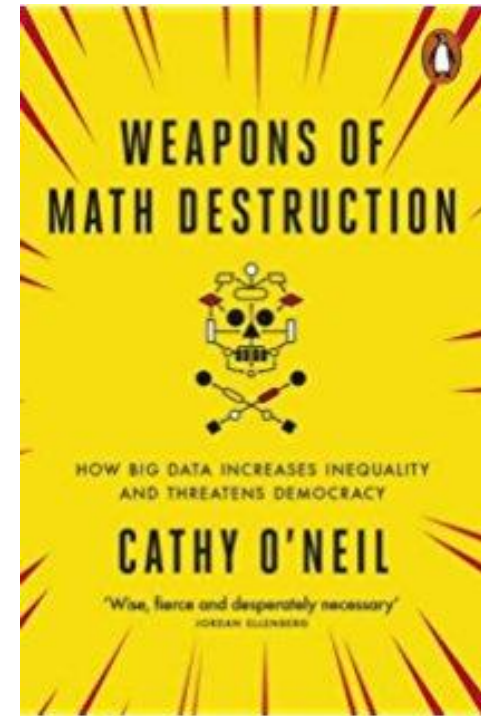
- Santé
- Education

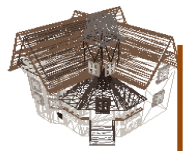




Dangers: systèmes prédictifs

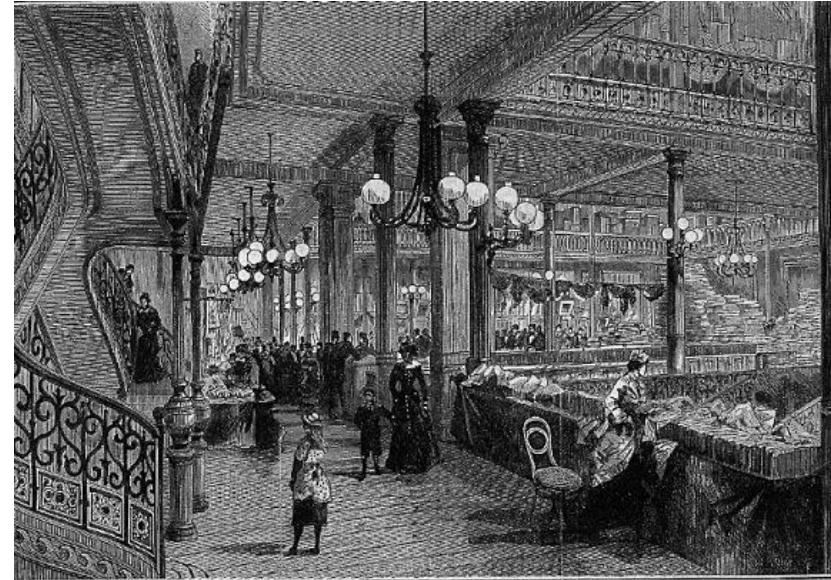
- Apprentissage sur de grandes masses de données (*big data*)
- Profilage individus
- Prédiction
 - risques,
 - gains,
 - comportements clients,
 - ...





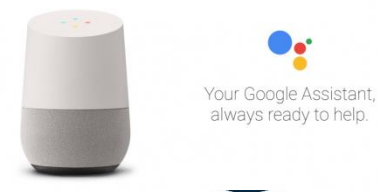
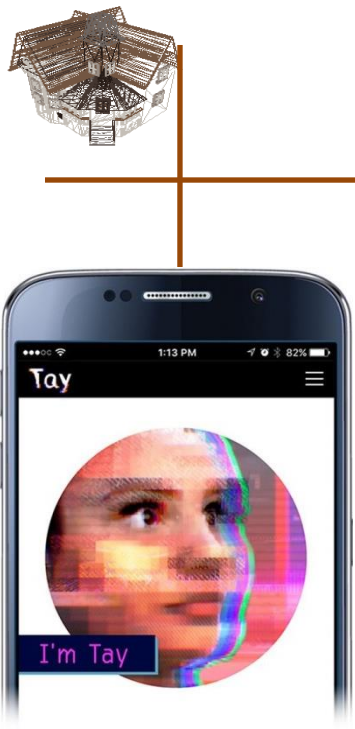
Changement économie

- Fin société de consommation de masse,
- Conception à la demande,
- longue traine,
- De la « femme sans tête » à la « femme cent têtes »,
- Web participatif « 2.0 », « like », *crowdsourcing (masse de données), ...*

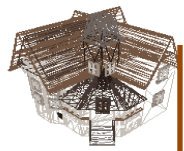


Agents conversationnels

- **Segment terminal de la chaîne de valeur**
 - Restauration de proximité
 - Hôtellerie
 - ...
- **Désintermédiation**
- **Disruption**



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Conclusion

Comment
faire pour que
la peur ne
masque pas
les dangers?

