



Social Impact and Ethics of AI

Steve Omohundro, Ph.D.
PossibilityResearch.com
SteveOmohundro.com
SelfAwareSystems.com

<http://googleresearch.blogspot.com/2015/06/inceptionism-going-deeper-into-neural.html>

The background of the entire slide is a dense, overlapping pattern of US 100 dollar bills. The bills are oriented in various directions, creating a textured, high-value visual field. The green and black colors of the currency are prominent.

McKinsey: AI and Robotics next 10 years

\$50 Trillion

US GDP is \$18 Trillion



AI Knowledge Work: \$25 Trillion/10 years

Marketing, ERP, Big Data, Smart Assistants



Internet of Things: \$15 Trillion/10 years

100 Billion devices by 2025

Cars, Appliances, Cameras, Meters, Wearables, etc.

<http://www.forbes.com/sites/gilpress/2014/08/22/internet-of-things-by-the-numbers-market-estimates-and-forecasts/>

<https://www.summitbusiness.net/images/Internet.jpg>

Robot Manufacturing: \$10 Trillion/10 years

Work 24 hours/day
No breaks, food, medical
Don't quit, get bored, get depressed
Work anywhere
Hazards OK
Don't leak secrets
Work well with others
Easy to replicate

Health Care: \$10 Trillion/10 years



Robot surgery, medical records, AI diagnosis

Self-Driving Vehicles: \$10 Trillion/10 years

Disrupt Dealers, Insurance, Parking, Finance, Trucking, Taxis
10 million jobs

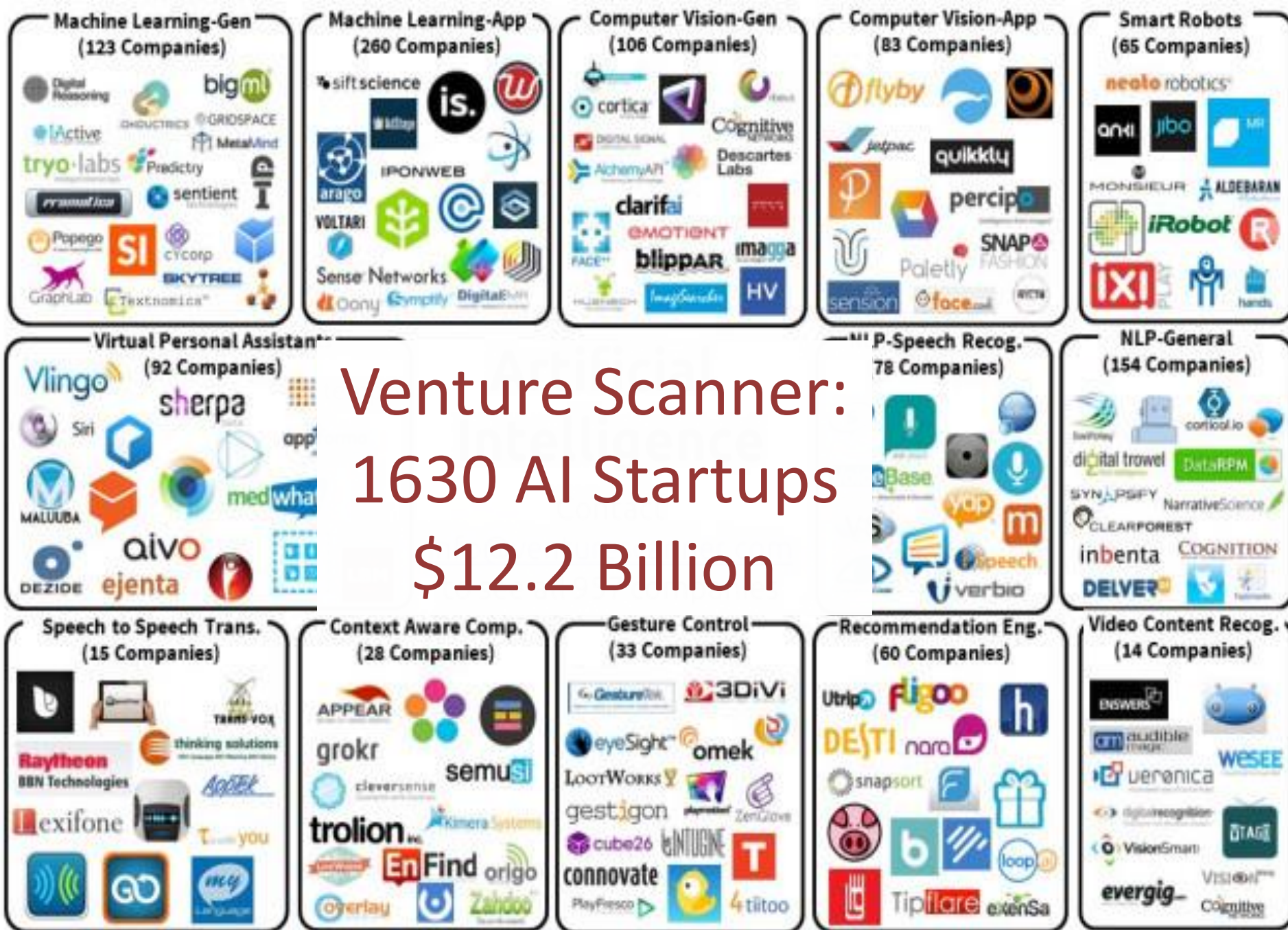


<http://www.theverge.com/2014/5/28/5756852/googles-self-driving-car-isnt-a-car-its-the-future>
<http://zackkanter.com/2015/01/23/how-ubers-autonomous-cars-will-destroy-10-million-jobs-by-2025/>

WinSun 3D printed 12,000 sq ft villa

A large, ornate, light-colored villa with a blue roof and a balcony, partially obscured by a tree. The villa features classical architectural elements like columns and a pediment. A green banner is visible on the balcony.

US Building construction: \$1 Trillion/yr
5.8 million employees



Venture Scanner:
1630 AI Startups
\$12.2 Billion

[Artificial Intelligence](#)[singularity](#)[AI](#)[Masayoshi Son](#)[Softbank](#)

Superintelligent AI explains Softbank's push to raise a \$100BN Vision Fund

Posted Feb 27, 2017 by [Natasha Lomas \(@riptari\)](#)

[Next Story](#)

Crunchbase

SoftBank

FOUNDED

1981

OVERVIEW

SoftBank is a multinational telecommunications and internet corporation focused on broadband, fixed-line telecommunications, e-commerce, internet, technology services, finance, media and marketing, and other businesses. The company operates through four major segments. The mobile communications segment provides mobile communications services; produces and distributes online games for smartphones ...

LOCATION

Tokyo, 40

CATEGORIES

<https://techcrunch.com/2017/02/27/superintelligent-ai-explains-softbanks-push-to-raise-a-100bn-vision-fund/>

AI Economy

Technological Unemployment
Increasing Inequality
Propaganda and Manipulation

AI Military

Lethal Autonomous Weapons
Robot Terrorism
Decreased Barriers to War

AI Society

Expanded Governance
Expanded Laws
Expanded Enforcement

Technological Unemployment?



April 27, 2017



May 4, 2017

<http://www.cnbc.com/2017/04/27/kai-fu-lee-robots-will-replace-half-of-all-jobs.html>

<http://www.marketwatch.com/story/alphabets-eric-schmidt-takes-a-contrarian-stance-on-the-robot-revolution-2017-05-04>

A mall security robot has knocked down and run over a toddler in Silicon Valley

Breaking Asimov's first law.

JOSH HRALA 15 JUL 2016



<http://www.sciencealert.com/a-mall-security-robot-recently-knocked-down-and-ran-over-a-toddler-in-silicon-valley>

7 Tesla Autopilot Accidents

April 26-August 2, 2016



CarNewsChina.com

Pedestrian Chicken

"We jokingly play chicken with them when we're trying to cross the street," he said. "You see one about to make a right turn at a light, and they're obviously trying to decide if we're going to step into the street or not. It's so tempting to sort of step toward the curb, which makes the car stop instantly and wait for you to go, except you don't go."

"We're just messing with it," he said, "to see what it'll do."

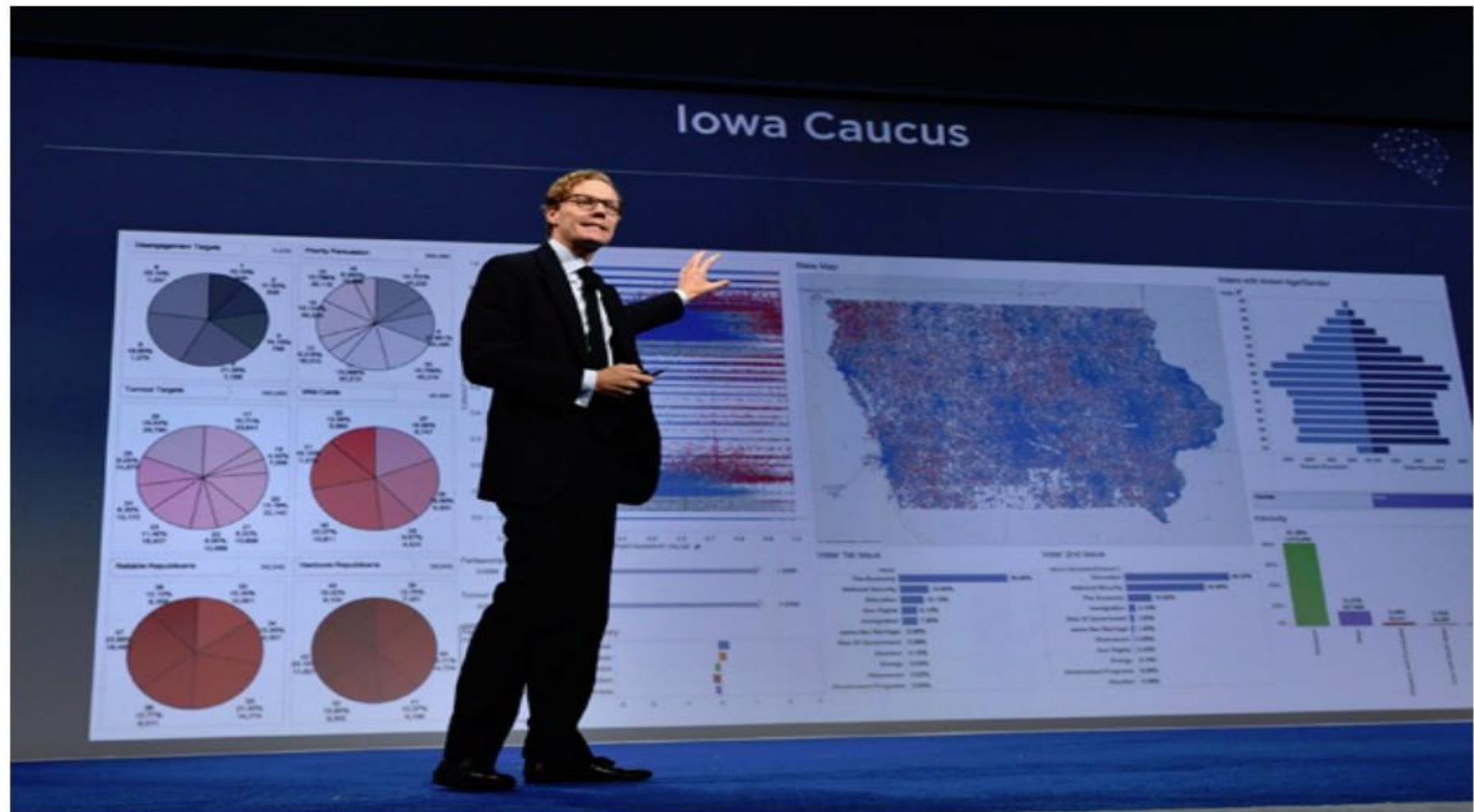
– Zandr Milewski



The British data-crunchers who say they helped Donald Trump to win

Are Cambridge Analytica brilliant scientists or snake-oil salesmen?

Paul Wood



CEO of Cambridge Analytica Alexander Nix (Photo: Getty) <http://www.spectator.co.uk/2016/12/the-british-data-crunchers-who-say-they-helped-donald-trump-to-win/>

TV anchor says live on-air 'Alexa, order me a dollhouse' – guess what happens next

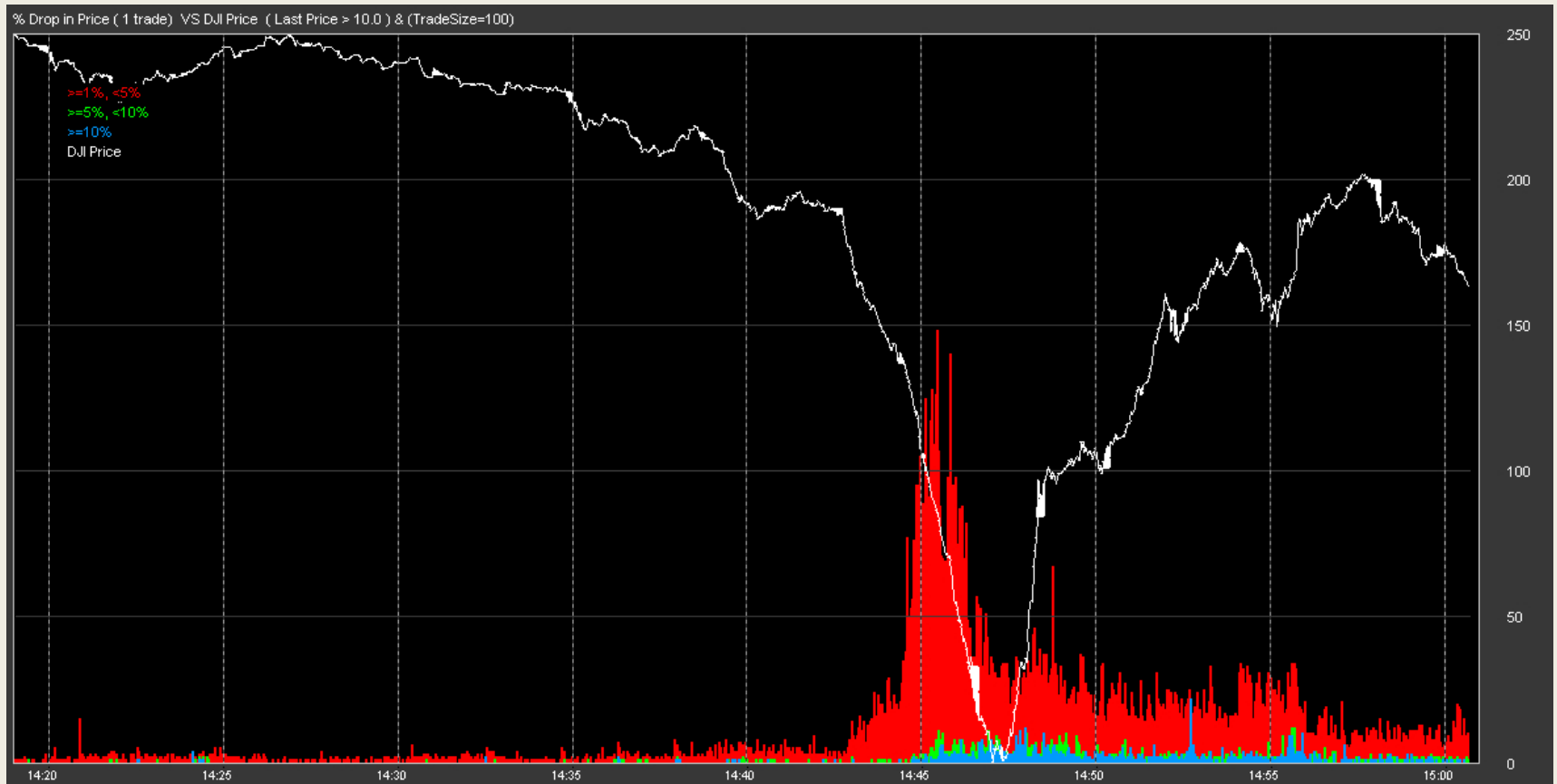
Story on accidental order begets story on accidental order begets accidental order



7 Jan 2017 at 00:58, Shaun Nichols



2010: Trillion Dollar Flash Crash



<http://www.nanex.net/20100506/PercDrop1.png>

Dow Industrials lost 9% in 36 minutes
Today: 50% of trades are automated HFT



ISIS using small drones to drop bombs on Iraqis

By: Jeff Schogol, January 11, 2017 *(Photo Credit: Iraqi defense ministry.)*

Serial Bugs

Parallel Bugs

Security Bugs

Hardware Bugs

Memory Leaks, Dangling
Pointers, Conversion Errors

Deadlocks, Race Conditions

Bad Encryption, Buffer Overflow

Rowhammer, Drammer,
Instruction Cache Leaks

Machine Learning Bugs

AI Goal Bugs

AI Governance Bugs

Collective AI Bugs

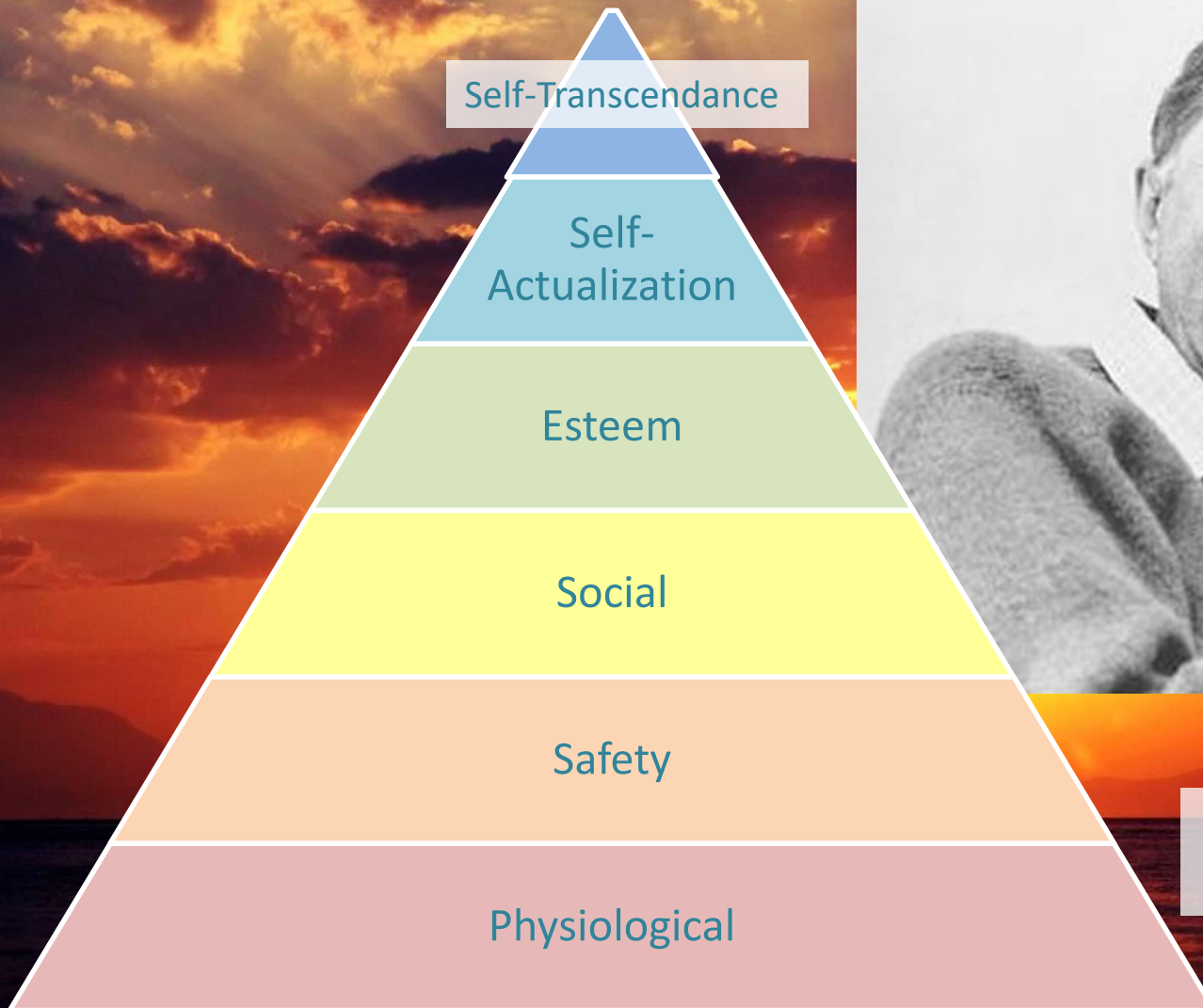
Adversarial Examples,
Inscrutable Behavior

Unintended Consequences, Basic AI Drives

Loopholes, Manipulations

Crashes, Long Tails, Black Swans

Maslow Hierarchy of Human Needs



1943

Maslow Hierarchy - Dystopia

Self-Transcendance

Loss of Meaning

Self-Actualization

Addiction

Esteem

Greed

Human Obsolescence

Social

Social Disconnection

VR Porn

Safety

Robot Warfare

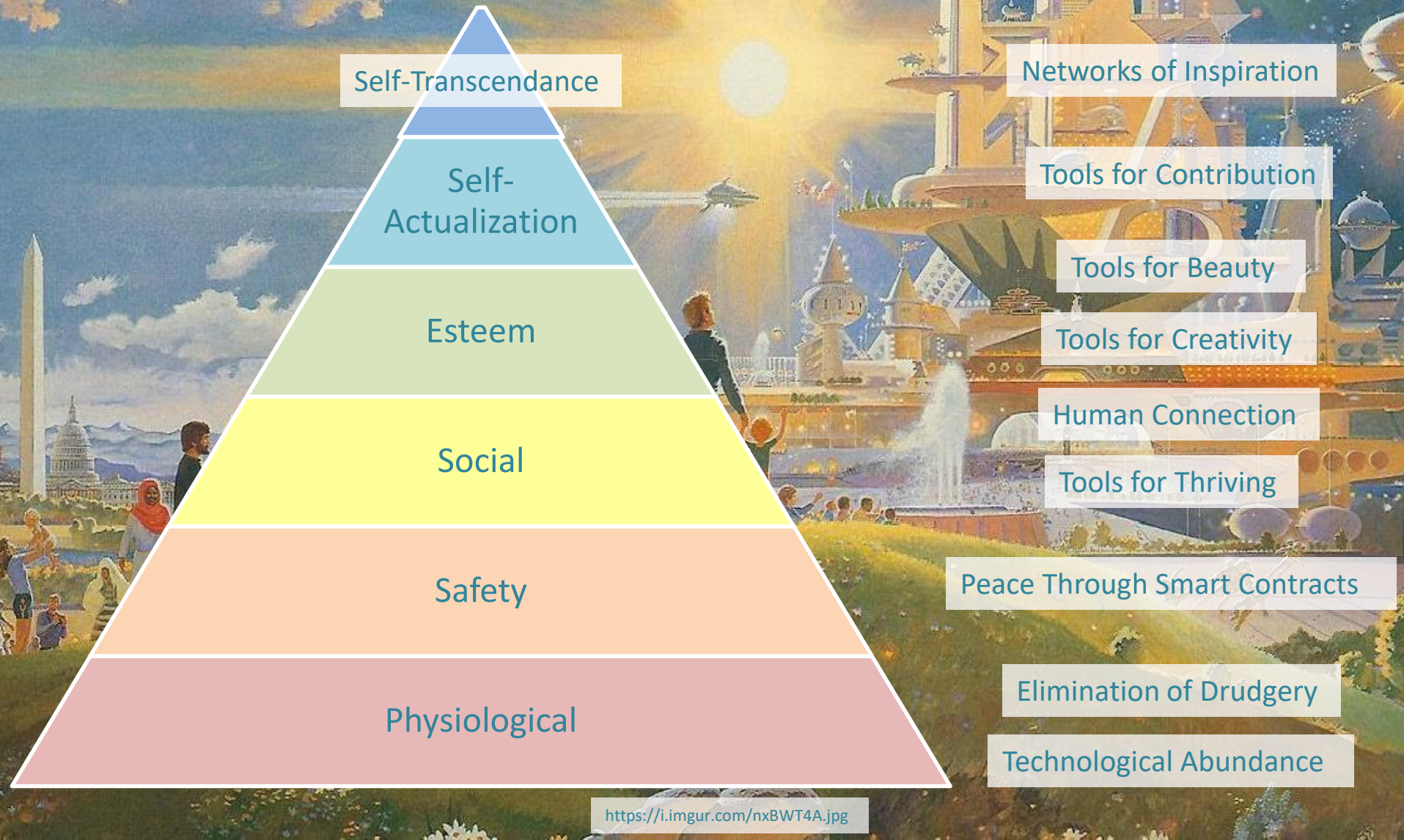
Cyber-Terrorism

Physiological

Inequality, Scarcity

Technological Unemployment

Maslow Hierarchy - Utopia





BENEFICIAL AI 2017

ASILOMAR AI PRINCIPLES

These principles were developed in conjunction with the 2017 Asilomar conference (videos [here](#)), through the process described [here](#).



<https://futureoflife.org/bai-2017/>

AI and Human Safety

- The future is bright!
- Need governance!
- Need new ideas!
- Need new methods!
- Need AI startups!

