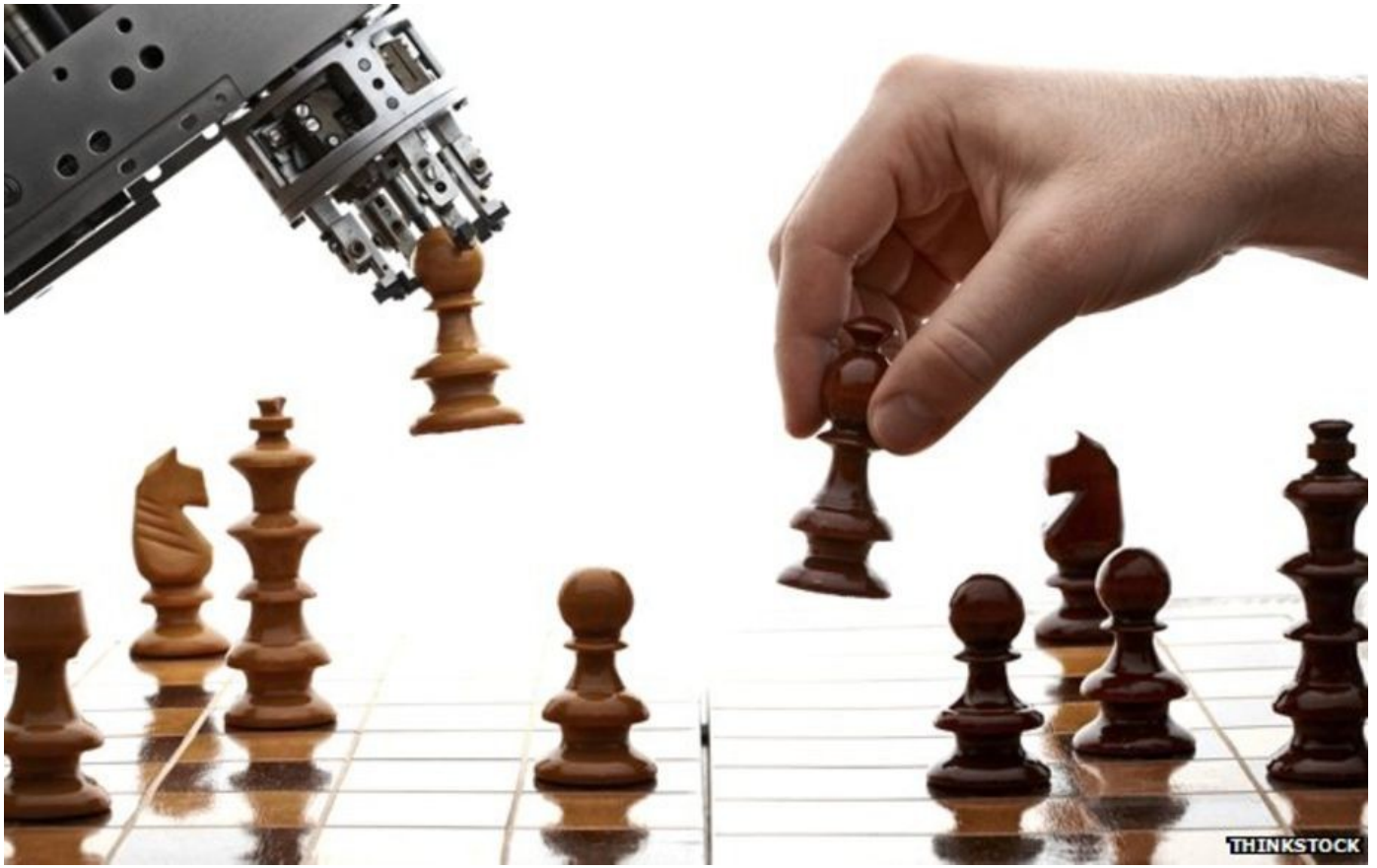


Introduction to Artificial Intelligence

COSC 4550 / COSC 5550

Professor Cheney

12/4/17

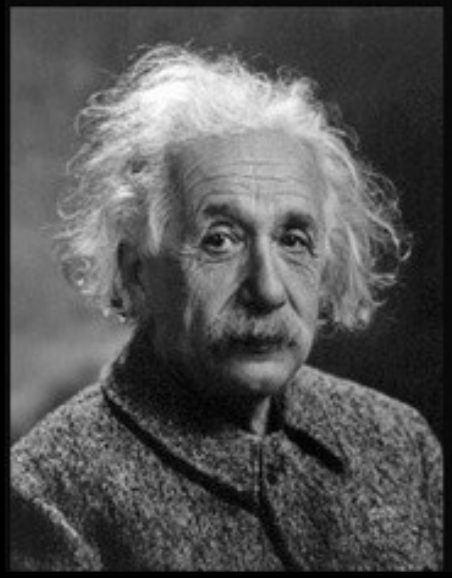
last lecture… you made it!

also... projects due tomorrow

the ethics of AI

this semester we've learned that we can
(in some circumstances) build intelligent AI

now the question is should we?
(or perhaps how should we?)



I made one great mistake in my life—when I signed that letter to President Roosevelt recommending that atom bombs be made; but there was some justification—the danger that the Germans would make them!

(Albert Einstein)

"With Great Power Comes Great Responsibility"
- Voltaire

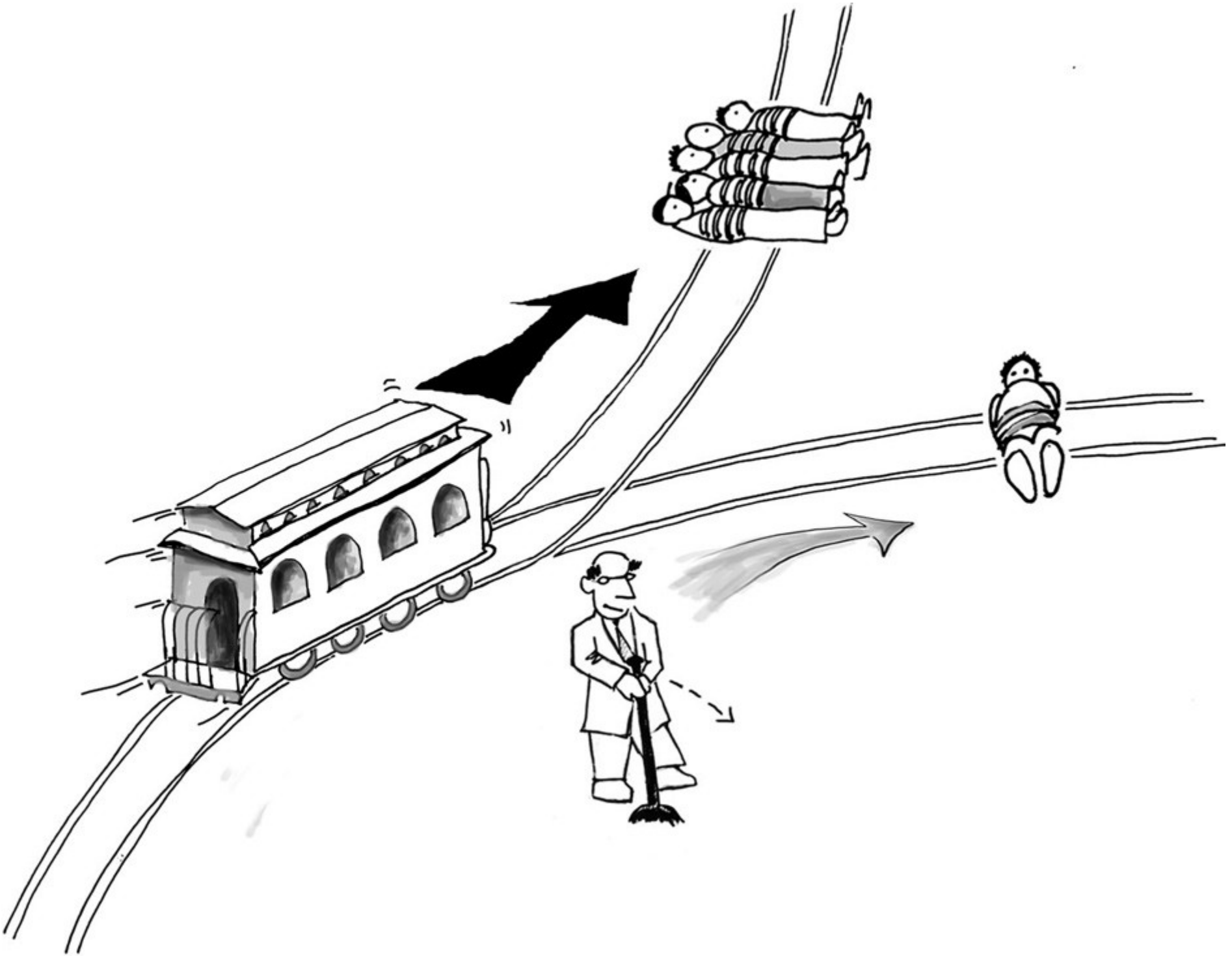
Google

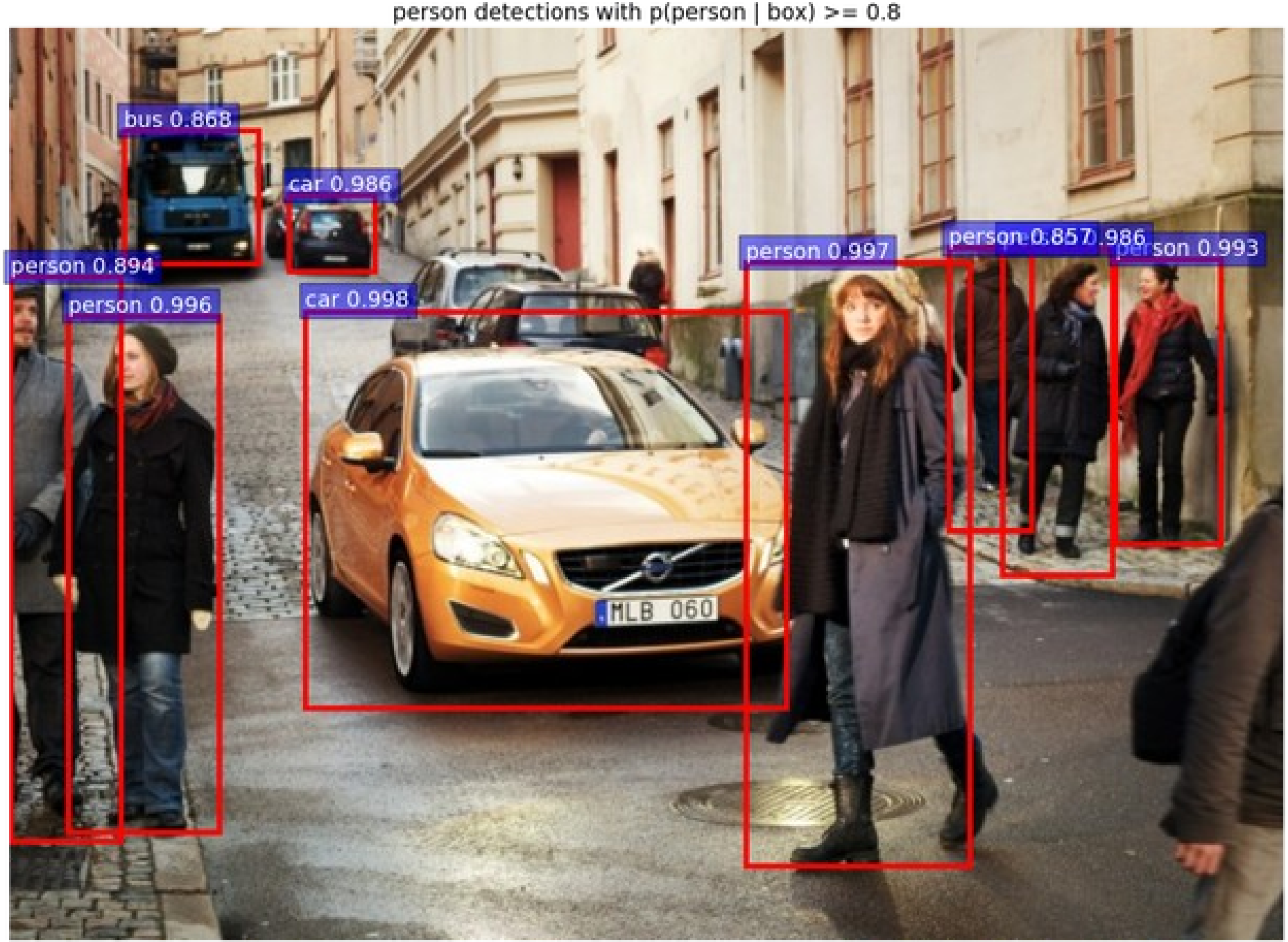
Annual Global Road Crash Statistics

- Nearly 1.3 million people die in road crashes each year, on average 3,287 deaths a day.
- An additional 20-50 million are injured or disabled.
- More than half of all road traffic deaths occur among young adults ages 15-44.
- Road traffic crashes rank as the 9th leading cause of death and account for 2.2% of all deaths globally.
- Road crashes are the leading cause of death among young people ages 15-29, and the second leading cause of death worldwide among young people ages 5-14.
- Each year nearly 400,000 people under 25 die on the world's roads, on average over 1,000 a day.
- Over 90% of all road fatalities occur in low and middle-income countries, which have less than half of the world's vehicles.
- Road crashes cost USD $518 billion globally, costing individual countries from 1-2% of their annual GDP.
- Road crashes cost low and middle-income countries USD $65 billion annually, exceeding the total amount received in developmental assistance.
- Unless action is taken, road traffic injuries are predicted to become the fifth leading cause of death by 2030.

Annual United States Road Crash Statistics

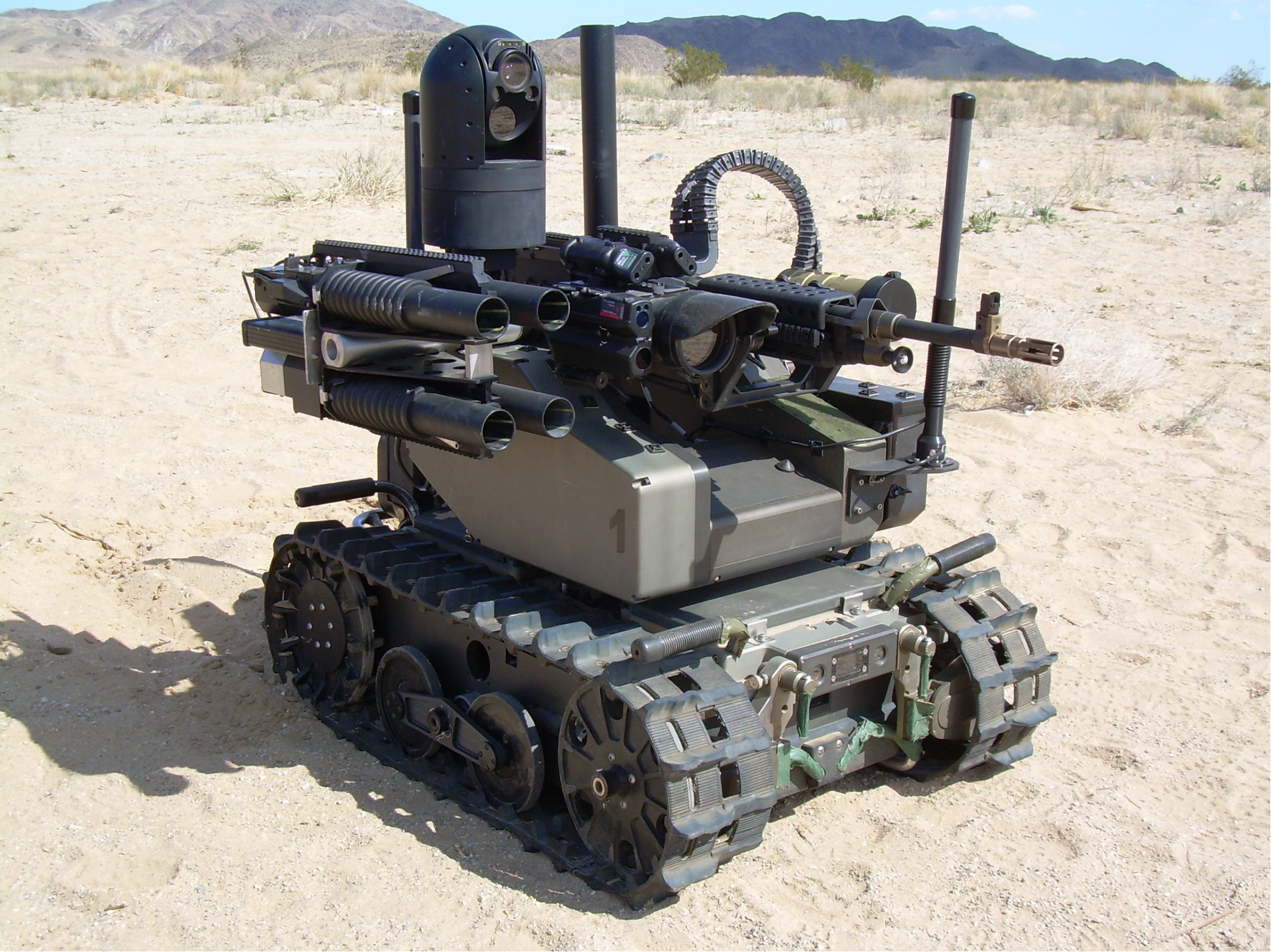
- Over 37,000 people die in road crashes each year
- An additional 2.35 million are injured or disabled
- Over 1,600 children under 15 years of age die each year
- Nearly 8,000 people are killed in crashes involving drivers ages 16-20
- Road crashes cost the U.S. $230.6 billion per year, or an average of $820 per person
- Road crashes are the single greatest annual cause of death of healthy U.S. citizens traveling abroad




person detections with p(person | box) >= 0.8
bus 0.868
car 0.986
person 0.894
person 0.996
car 0.998
person 0.997
person 0.857
person 0.993
MLB 060

26
SCORE: 000
DIFFICULTY: HARD
HOBBIES
Daphne Willson
WALL
INFO
PHOTO

acer
WWW.PAINTBALLSENTRY.COM



SAFETY

Boston Dynamics

AI and Robotics Companies Ask UN to Ban 'Killer Robots'

Representatives of prominent AI and robots companies, including Google, Tesla, and Universal Robotics, have called for the UN to ban killer robots. But the issue is turning out to be as complex as the robots themselves.

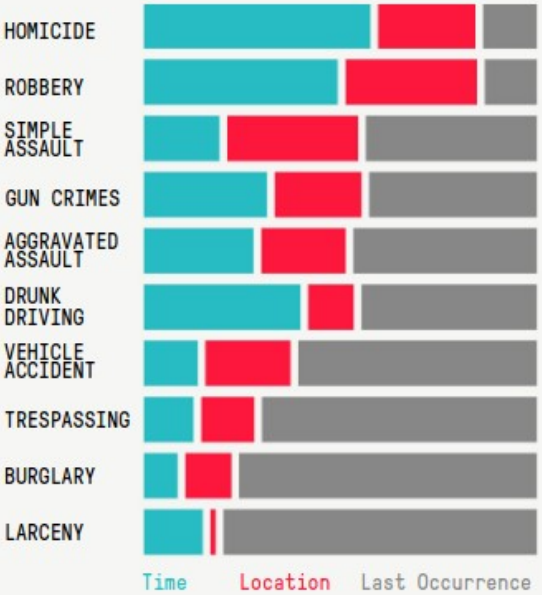
by: Chris Wiltz in Government/Defense, Automation & Motion Control, Aerospace, Government/Defense, Electronics & Test, Automation on September 11, 2017

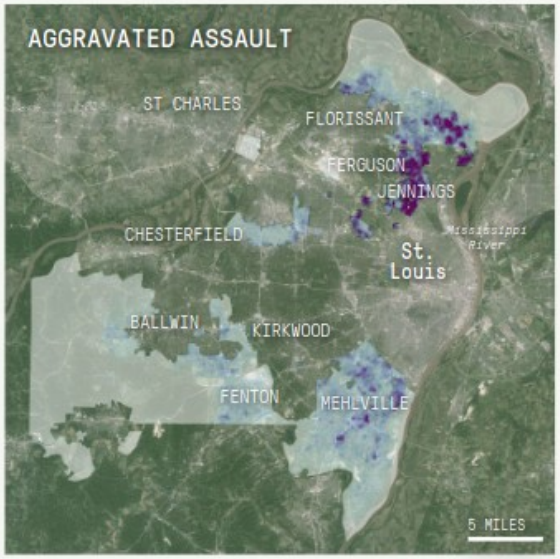
Tesla CEO Elon Musk, Google Deepmind Founder Mustafa Suleyman, and Universal Robotics Founder Esben Østergaard are among the 116 robotics and artificial intelligence founders and experts who signed a recent open letter to the UN asking for a ban on lethal autonomous weapons systems (LAWS), more colloquially known as, "killer robots."

The letter reads in part:

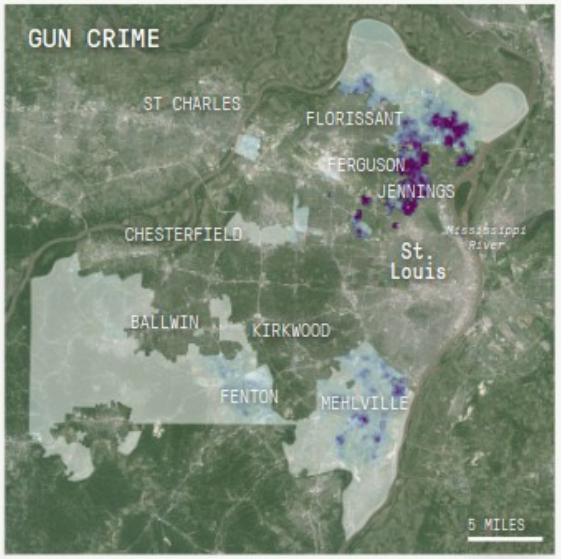
> "Lethal autonomous weapons threaten to become the third revolution in warfare. Once developed, they will permit armed conflict to be fought at a scale greater than ever, and at timescales faster than humans can comprehend. These can be weapons of terror, weapons that despots and terrorists use against innocent populations, and weapons hacked to behave in undesirable ways. We do not have long to act. Once this Pandora's box is opened, it will be hard to close."

The letter, which represents the first time representatives of the robotics and AI industry have voiced a stance on LAWS, was released at the opening of the International Joint Conference on Artificial Intelligence (IJCAI 2017) in Melbourne, Australia, and came in the wake of the cancellation of a UN meeting of a group of government experts (GGEs) to discuss LAWS that was to take place from August 21- 25. The meeting was canceled due to some states failing to pay their financial contributions to the UN. The letter calls for the High Contracting Parties to double up their efforts at the meeting, which has been rescheduled for November 13-17.

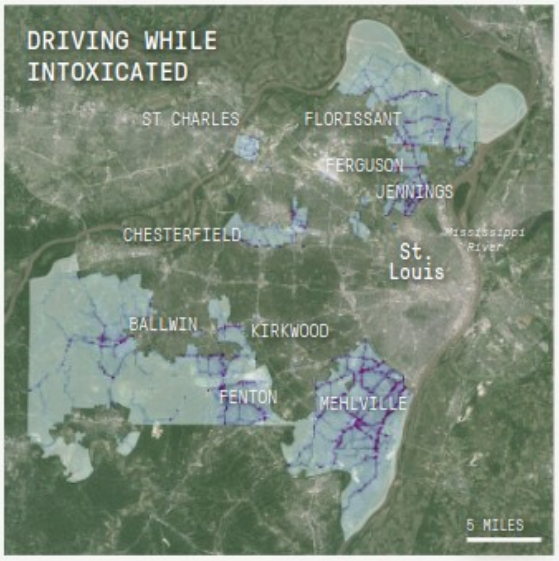




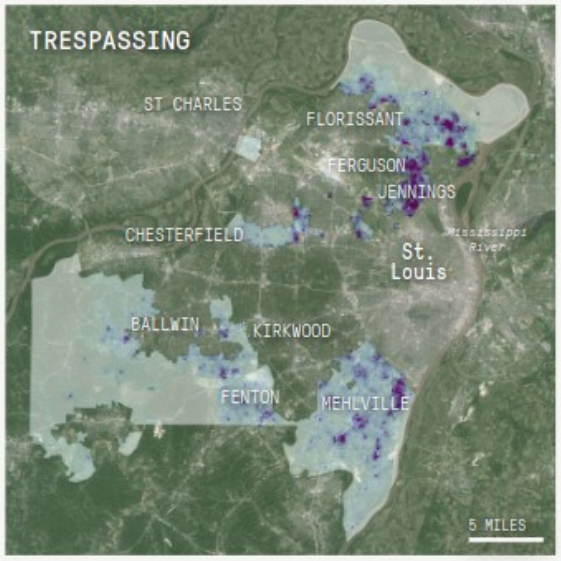
Aggravated assault (assault with a dangerous weapon) makes up 18.5 percent of the overall risk score assigned to a cell. The darkest regions on this map represent cells with a 1 in 320 chance of at least one aggravated assault taking place there during the shift.



Gun crime (all homicides, robberies, and aggravated assaults with a firearm) makes up about 16.5 percent of the overall risk score. The darkest regions represent a 1 in 850 chance of at least one gun crime taking place.



Driving while intoxicated makes up 10 percent of the total risk score. The darkest regions represent a 1 in 1,300 chance of at least one DWI taking place.



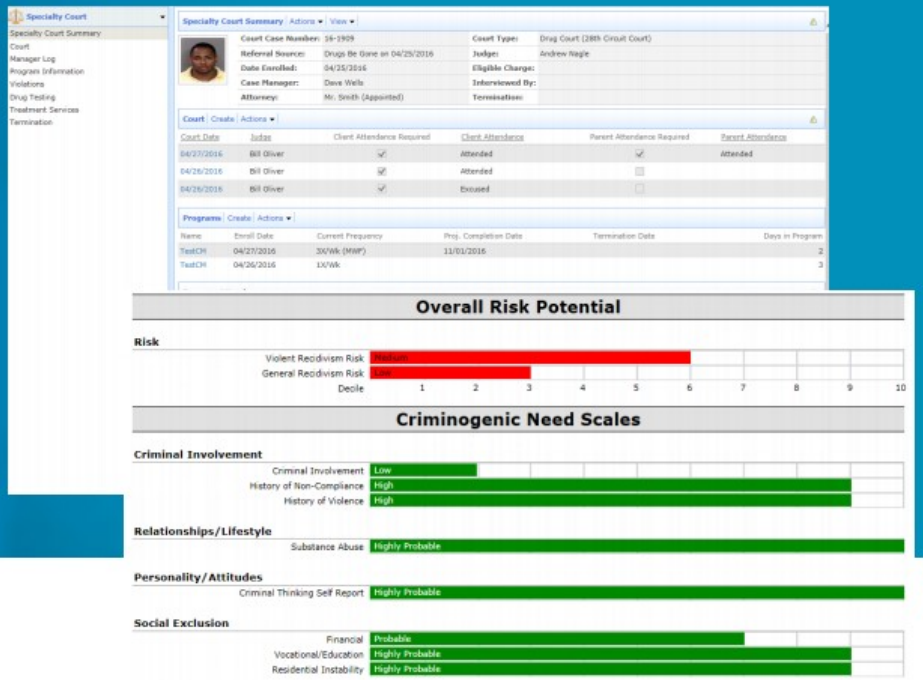
Trespassing makes up about 10 percent of the total risk score. The darkest regions represent cells a 1.7 percent chance of at least one act of trespassing taking place.

Homicides make up 0.66 percent of the total risk score assigned to a cell. The two darkest cells on this map present a 3 percent chance of at least one homicide taking place.

SOURCE: HUNCHLAB

Northpointe Specialty Courts

Manage your treatment docket



Case plans and activities are based on individual risks and needs for meaningful intervention.

Your court works hard to promote positive change while holding offenders responsible for their choices. As experts who specialize in RNR strategies and dynamic caseflow management, we stand ready to help with our Northpointe Specialty Courts software:

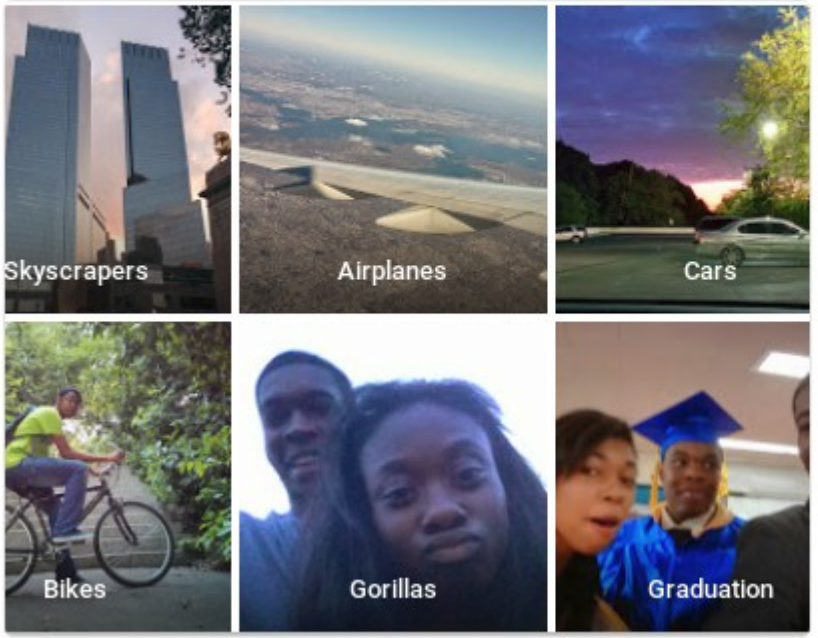
- Automatically determine program eligibility
- Perform validated risk/needs assessments
- Build meaningful case plans
- Capture treatments and tests
- Track progress, results, and outcomes
- Coordinate and collaborate with your team
- Communicate issues and progress

> *Northpointe Specialty Courts is an integrated software solution that manages all participant processing and case/court activities.*

Jacky
@jackyalcine

Follow

Google Photos, y'all fucked up. My friend's not a gorilla.



6:22 PM - 28 Jun 2015

Racial Bias in Bail Decisions*

David Arnold† Will Dobbie‡ Crystal S. Yang§

October 2017

Abstract

This paper develops a new test for identifying racial bias in the context of bail decisions – a high-stakes setting with large disparities between white and black defendants. We motivate our analysis using Becker's (1957, 1993) model of racial bias, which predicts that rates of pre-trial misconduct will be identical for marginal white and marginal black defendants if bail judges are racially unbiased. In contrast, marginal white defendants will have higher rates of misconduct than marginal black defendants if bail judges are racially biased, whether that bias is driven by racial animus, inaccurate racial stereotypes, or any other form of bias. To test the model, we develop a new estimator that uses the release tendencies of quasi-randomly assigned bail judges to identify the relevant race-specific misconduct rates. Estimates from Miami and Philadelphia show that bail judges are racially biased against black defendants, with substantially more racial bias among both inexperienced and part-time judges. We find suggestive evidence that this racial bias is driven by bail judges relying on inaccurate stereotypes that exaggerate the relative danger of releasing black defendants.

How LinkedIn's search engine may reflect a gender bias

Originally published August 31, 2016 at 11:47 am | *Updated September 8, 2016 at 2:09 pm*

1 of 2 *Searching 'Stephanie' on LinkedIn Searches for some common female names on professional social networking site LinkedIn bring up a prompt asking if users meant to look for similar-looking male names.*

A search for a female contact may yield website responses asking if the searcher meant to search for a similar-looking man's name. This comes as some researchers warn that software algorithms aren't immune from human biases.

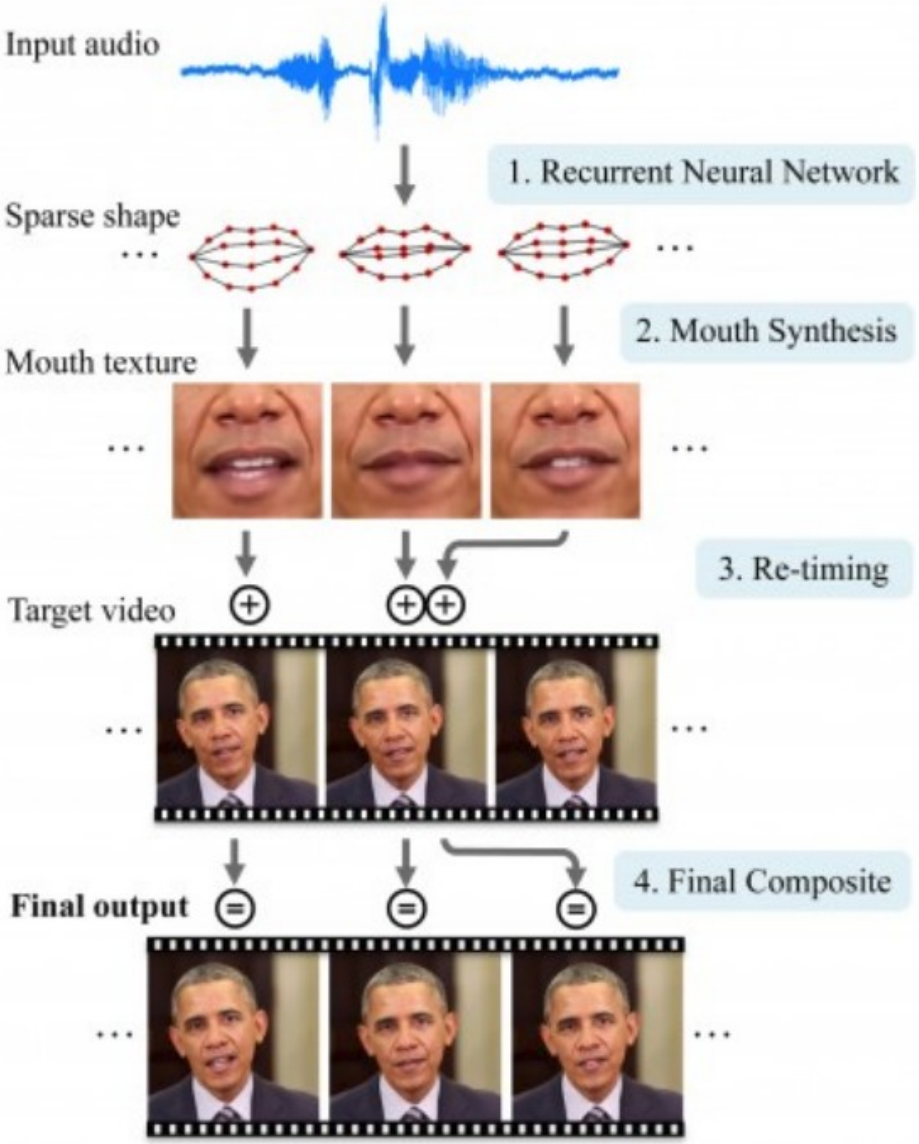
Tay, Microsoft's AI chatbot, gets a crash course in racism from Twitter

Attempt to engage millennials with artificial intelligence backfires hours after launch, with TayTweets account citing Hitler and supporting Donald Trump

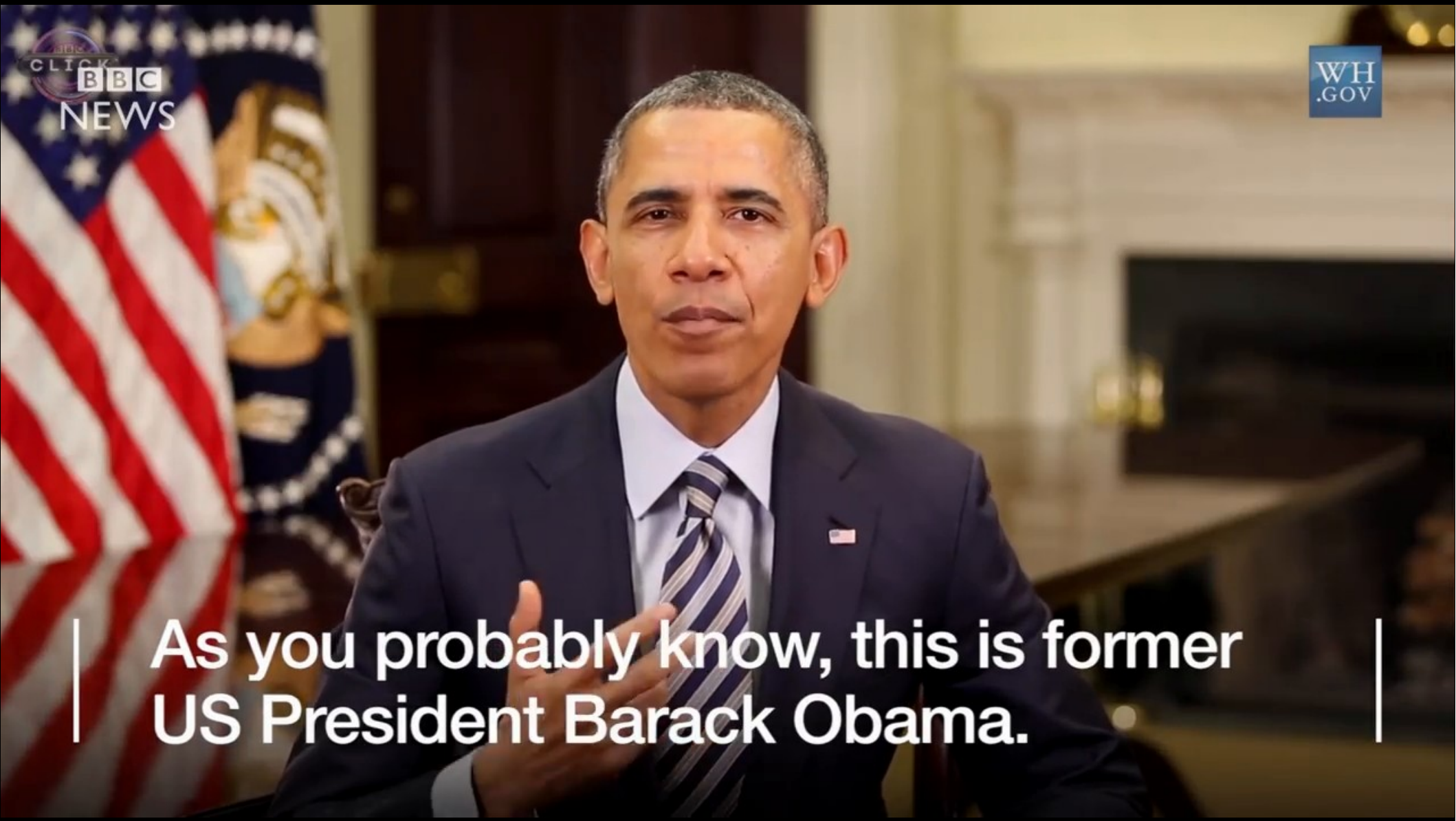
Tay uses a combination of artificial intelligence and editorial written by a team including improvisional comedians. Photograph: Twitter

Microsoft's attempt at engaging millennials with artificial intelligence has backfired hours into its launch, with waggish Twitter users teaching its chatbot how to be racist.

FAKE
NEWS



A neural network first converts the sounds from an audio file into basic mouth shapes. Then the system grafts and blends those mouth shapes onto an existing target video and adjusts the timing to create a new realistic, lip-synced video. ***University of Washington***

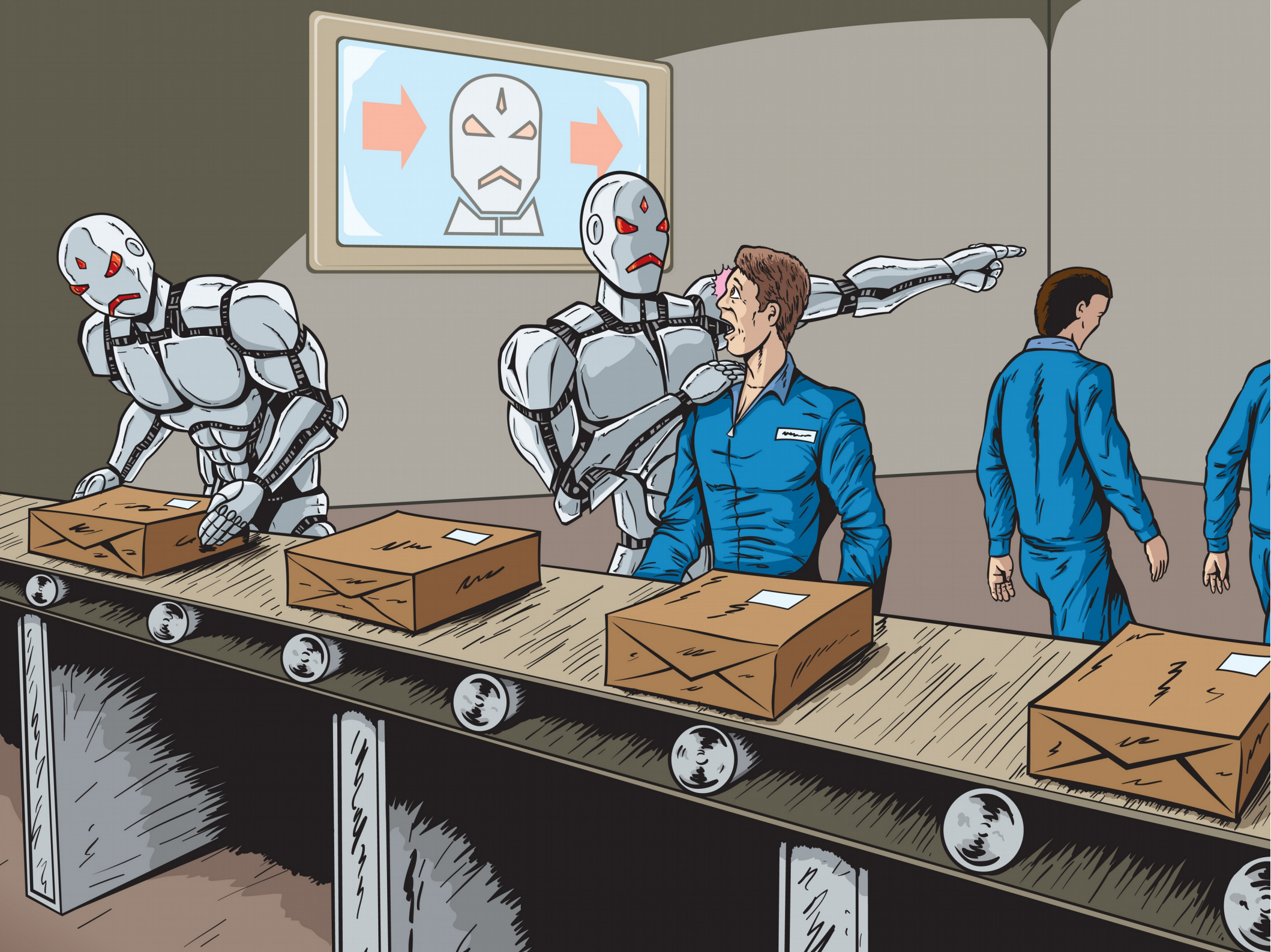

BBC CLICK
BBC NEWS
WH.GOV
As you probably know, this is former US President Barack Obama.

Face2Face: Real-time Face Capture and Reenactment of RGB Videos

Justus Thies[1], *Michael Zollhöfer*[2], *Marc Stamminger*[1], *Christian Theobalt*[2], *Matthias Nießner*[3]

[1]University of Erlangen-Nuremberg
[2]Max-Planck-Institute for Informatics
[3]Stanford University

CVPR 2016 (Oral)



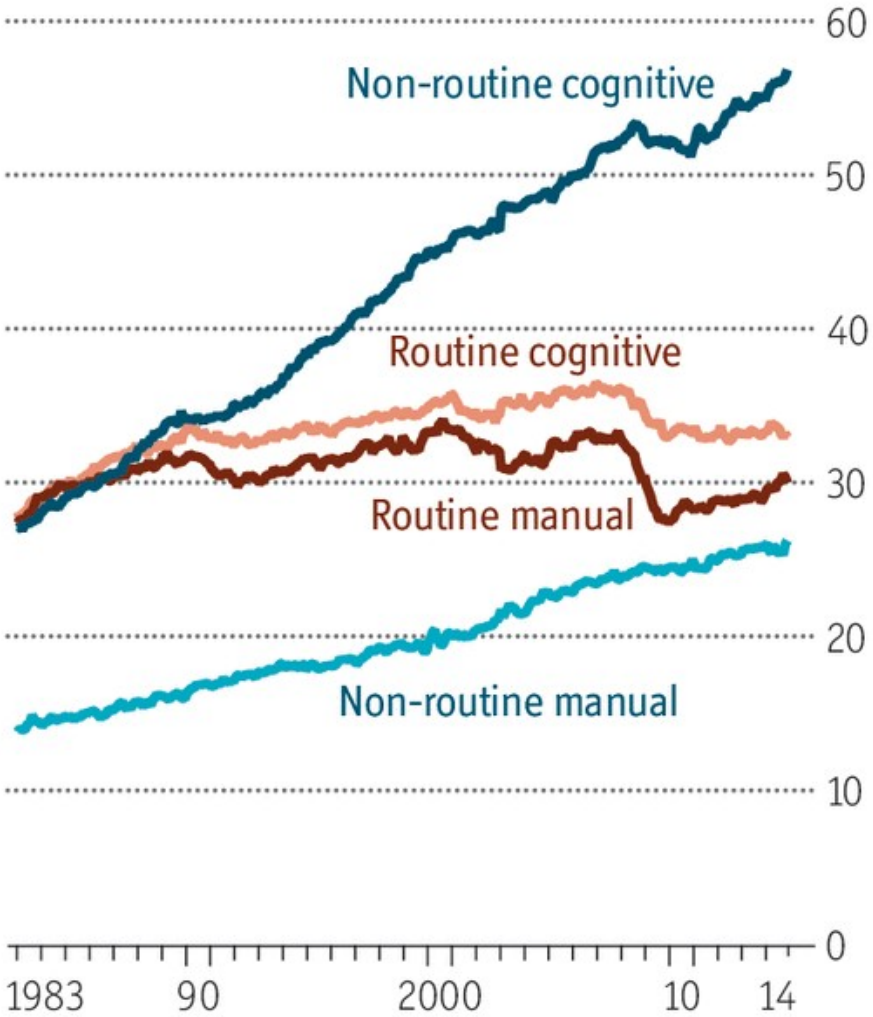
HOW AMERICAN WORKERS GOT LEFT BEHIND

Actual wages compared to estimated increases if they had risen with productivity

SOURCE: BUREAU OF LABOR STATITSTICS—PRODUCTIVITY, AVERAGE WAGE OF NON-SUPERVISORY PRODUCTION WORKS, CONSUMER PRICE INDEX

Think

United States employment, by type of work, m



Sources: US Population Survey; Federal Reserve Bank of St. Louis

Economist.com

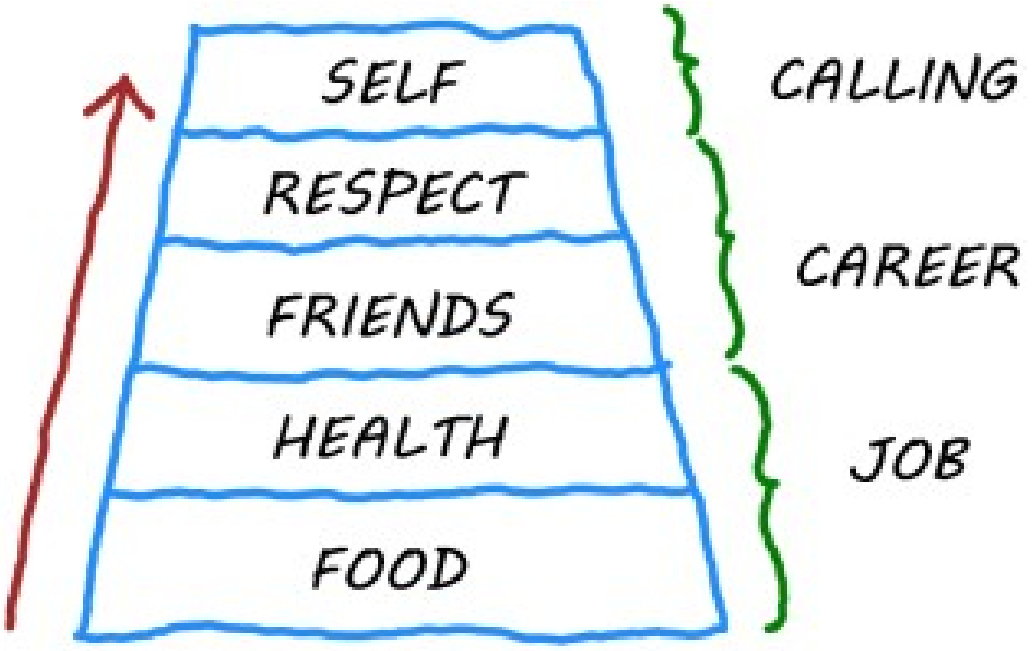
JOBS AT RISK OF AUTOMATION

POSITION	PROBABILITY OF AUTOMATION
Loan officers	98%
Receptionists/clerks	96%
Paralegals/legal assistants	94%
Retail salespersons	92%
Taxi drivers/chauffeurs	89%
Security guards	84%
Cooks/fast food	81%
Bartenders	77%
Personal financial advisers	58%
Computer programmers	48%
Reporters/correspondents	11%
Musicians/singers	7.4%
Lawyers	3.5%
Elementary school teachers	0.4%
Physicians/surgeons	0.4%

CBC NEWS

Source: Bloomberg

BASIC
INCOME
GUARANTEE


SELF
RESPECT
FRIENDS
HEALTH
FOOD
CALLING
CAREER
JOB

"In the 21st century a 15-hour week will suffice, as we turn instead to "how to use freedom from pressing economic cares."

John Maynard Keynes, 1930,
"Economic possibilities for our grandchildren"

MISSION

Artificial general intelligence (AGI) will be the most significant technology ever created by humans.

OpenAI's mission is to build safe AGI, and ensure AGI's benefits are as widely and evenly distributed as possible. We expect AI technologies to be hugely impactful in the short term, but their impact will be outstripped by that of the first AGIs.

We're a non-profit research company. Our full-time staff of 60 researchers and engineers is dedicated to working towards our mission regardless of the opportunities for selfish gain which arise along the way.

We focus on long-term research, working on problems that require us to make fundamental advances in AI capabilities.

By being at the forefront of the field, we can influence the conditions under which AGI is created. As Alan Kay said, "The best way to predict the future is to invent it."

We publish at top machine learning conferences, open-source software tools for accelerating AI research, and release blog posts to communicate our research. We will not keep information private for private benefit, but in the long term, we expect to create formal processes for keeping technologies private when there are safety concerns.

READ THE OPENAI LAUNCH BLOG POST >

SPONSORS

OpenAI is sponsored by individuals and companies.

SAM ALTMAN

GREG BROCKMAN

REID HOFFMAN

JESSICA LIVINGSTON

ELON MUSK

PETER THIEL

Y Research

Infosys

Microsoft

amazon web services

Open Philanthropy Project

ONION
WEEKENDER
JUNE 25, 2017
‘Literally No One Calls Me That Or Has Ever Called Me That’
OUR INTERVIEW WITH OL' MUSKY
INSIDE Our Tips For Unplugging, Decompressing, Going Outside, Getting Lost, And Dying

News March 1, 2016

Baidu's Chief Scientist: worrying about AI today is like worrying about overpopulation on Mars

‘AI IS THE NEW ELECTRICITY’

“Just as electricity transformed almost everything 100 years ago, today I actually have a hard time thinking of an industry that I don’t think AI will transform in the next several years.”

Andrew Ng

Former chief scientist at Baidu, Co-founder at Coursera

WHERE DO WE
GO FROM HERE?