AI in the Real world
Where Are the Driverless Cars?

Eindhoven, October 29th, 2019
AI Evolution

Now:
• Consumer data-driven machine learning
• Speech recognition, language processing, computer vision, etc

Towards:
• Industry data-driven machine learning, sensor-based data-driven algorithms
• Convergence of data- and (physics)model-based machine learning
• Truly intelligent: self-directed learning, use noisy data, real-time performance, etc.
EAISI Vision

**AI for the the real world**

With AI moving Data-only to Data-Human-Machine, we aim to use our traditional strengths to significantly leverage the huge potential of this next generation AI.
TU/e is investing 100 M€ in new AI institute in the next 5 years

• As much as 50 new AI-related professor positions across the TU/e, on top of 100 existing AI-related positions

• Research, targeted for industrial application

• Education
  • New MSc and BSc programs in AI
  • Multi-disciplinary challenge-based learning

• Co-location and AI-labs in dedicated building at TU/e campus, together with student teams
Source: Raymond Kurzweil, Kurzweil Accelerating Intelligence
The Internet of Vehicles
Traffic is chaos per definition

It mainly functions because people color outside the lines (...same for innovative companies, ...and for society)

AI should never be allowed to do so
Mandatory ADAS technology from 2021 in EU

1. Advanced emergency braking (cars)
2. Alcohol interlock installation facilitation (cars, vans, trucks, buses)
3. Drowsiness and attention detection (cars, vans, trucks, buses)
4. Distraction recognition / prevention (cars, vans, trucks, buses)
5. Event (accident) data recorder (cars and vans)
6. Emergency stop signal (cars, vans, trucks, buses)
7. Full-width frontal occupant protection crash test - improved seatbelts (cars and vans)
8. Head impact zone enlargement for pedestrians and cyclists - safety glass in case of crash (cars and vans)
9. Intelligent speed assistance (cars, vans, trucks, buses)
10. Lane keeping assist (cars, vans)
11. Pole side impact occupant protection (cars, vans)
12. Reversing camera or detection system (cars, vans, trucks, buses)
13. Tire pressure monitoring system (vans, trucks, buses)
14. Vulnerable road user detection and warning on front and side of vehicle (trucks and buses)
15. Vulnerable road user improved direct vision from driver’s position (trucks and buses)
“Our Vision is that by 2020, nobody should be seriously injured or killed in a new Volvo Car.”

Hakan Samuelsson, CEO, Volvo Cars
The Internet of Vehicles
Industry 4.0

From Industry 1.0 to Industry 4.0

First Industrial Revolution
based on the introduction of mechanical production equipment driven by water and steam power

First mechanical loom, 1784

Second Industrial Revolution
based on mass production achieved by division of labor concept and the use of electrical energy

First conveyor belt, Cincinnati slaughterhouse, 1870

Third Industrial Revolution
based on the use of electronics and IT to further automate production

First programmable logic controller (PLC) Modicon 084, 1969

Fourth Industrial Revolution
based on the use of cyber-physical systems

Degree of complexity

1800 1900 2000 Time

Today
Machines can do some surprising things. But what you really want to know is this: Will your job be around in the future?

We have the "definitive" guide.

Researchers took a shot at estimating how technology will affect the job market in 20 years. Find your job below to see what the data say about your future.

Accountants and Auditors have a 93.5% chance of being automated.

How do we know this? Some aspects of a job are easier to automate than others. it all depends on the tasks. Look at the orange bars to see how Accountants and Auditors compare with other professions...
**Physiological needs:**
- food, water, warmth, rest

**Safety needs:**
- security, safety

**Belongingness and love needs:**
- intimate relationships, friends

**Esteem needs:**
- prestige and feeling of accomplishment

**Self-actualization:**
- achieving one’s full potential, including creative activities

**Self-fulfillment needs**
Thursday 31/10 www.strp.nl

How intelligent is AI?
STRP Scenario #3

31 October

Thursday 31 October 2019, 20:00
Natlab, Strijp-S, Eindhoven
Language: English
Tickets: €10,- via the ticket link
“The real danger is not that computers will begin to think like humans, but that humans will begin to think like computers.”

Sydney J. Harris
AI for the real world