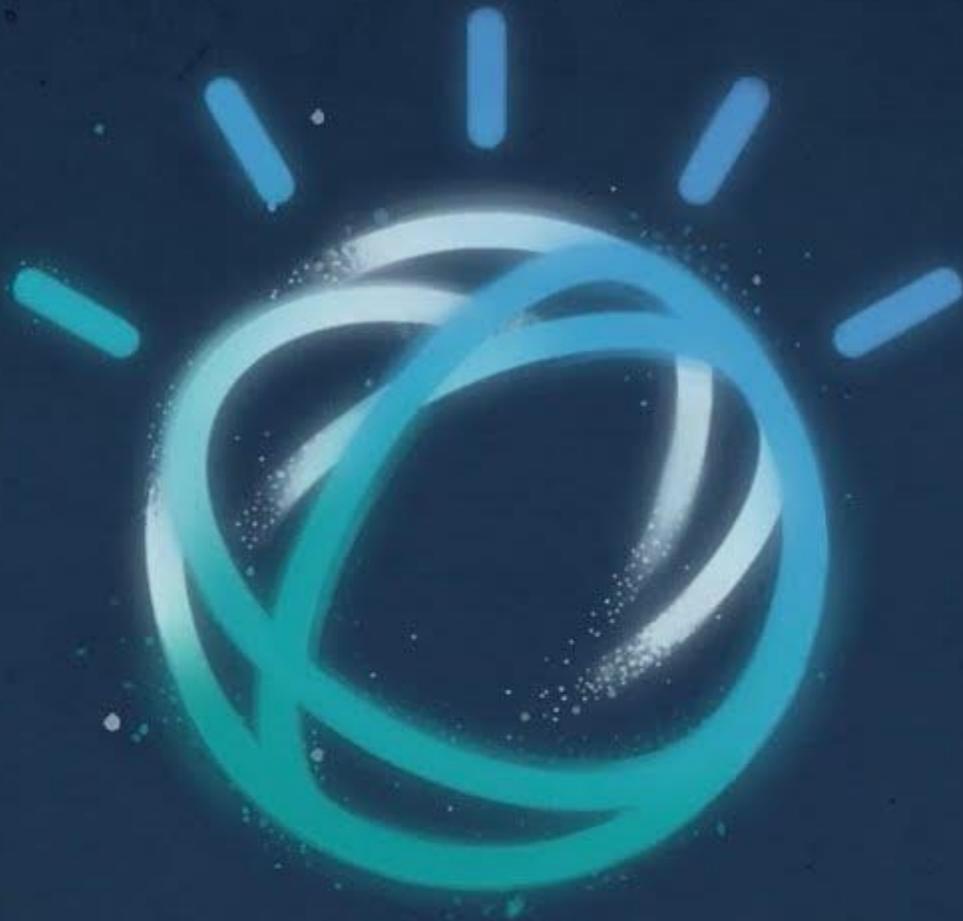




Responsible AI in healthcare

Peter-Paul Verbeek, University of Twente

STAT

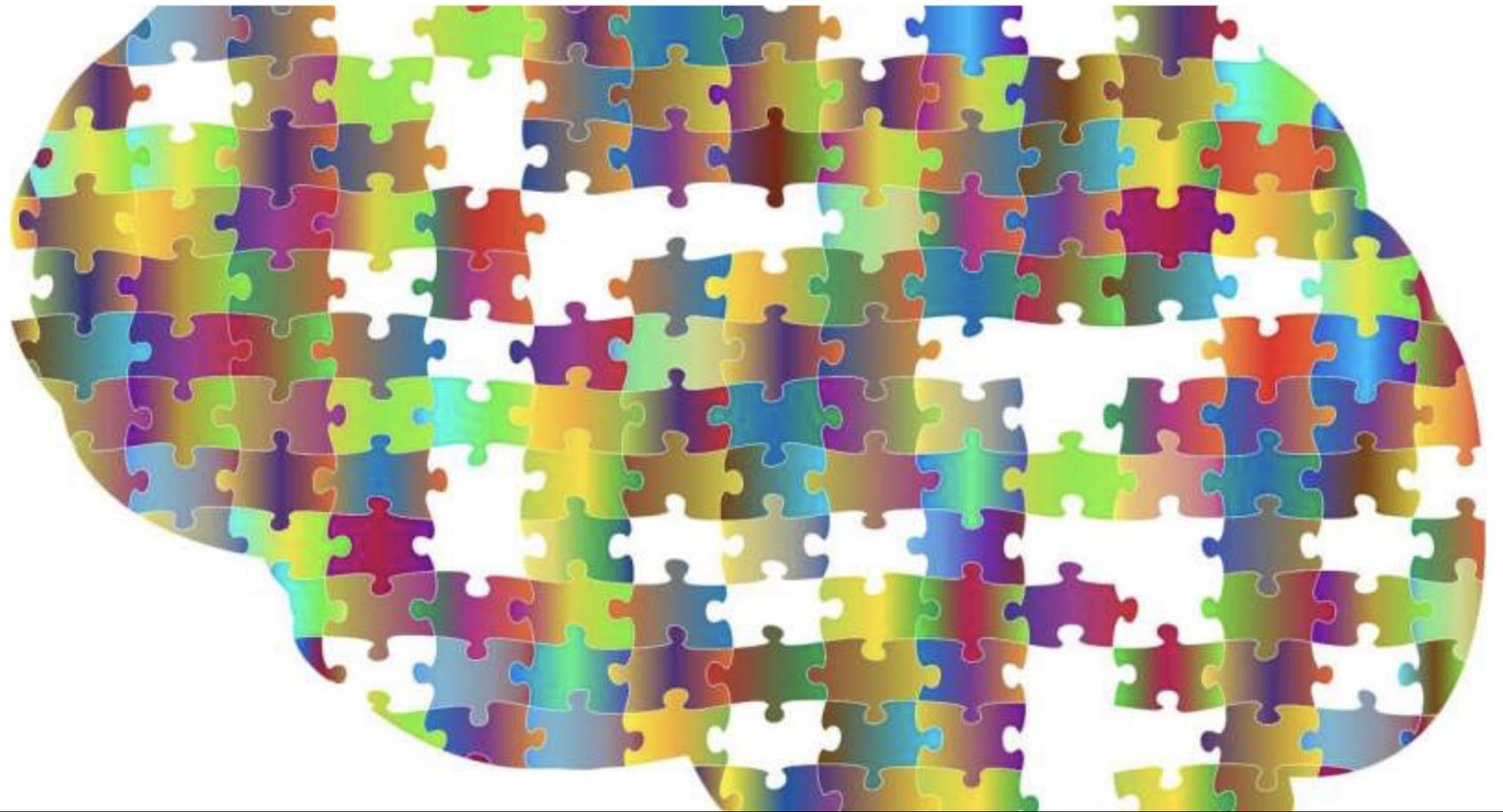


FOR ONCOLOGY

🕒 JUNE 4, 2019

AI gives reliable coma outcome prediction

by Wiebe Van Der Veen, University of Twente



Prof. dr. Michel van Putten

IEEE
SPECTRUM

FOR THE TECHNOLOGY INSIDER | 07.17

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BRAIN BUBBLE
Tech titans swoon
over neural hacking
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A BETTER
ELECTRIC MOTOR
14 percent more
power at no extra cost
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HOW FRANCE HELPED
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Minitel and the birth
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Reinventing a paragon
with power electronics
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Your Smartphone Will See You Now

Digital psychiatry apps that collect and monitor
data can spot when something's wrong—
and then help you get back on track P. 44



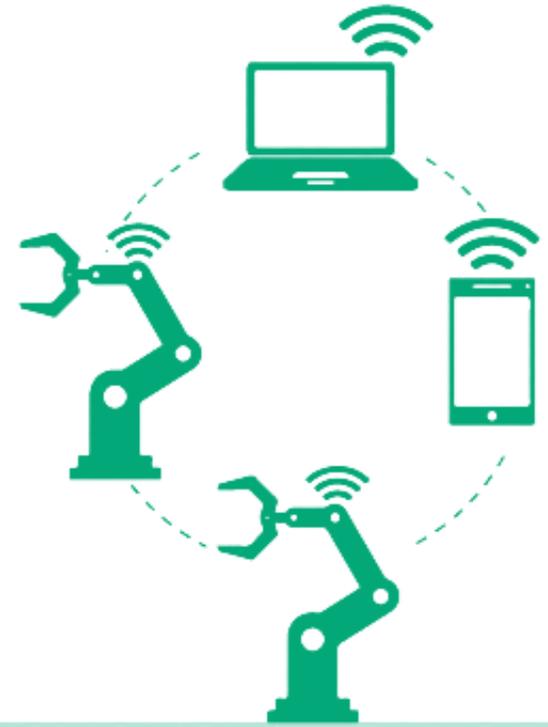
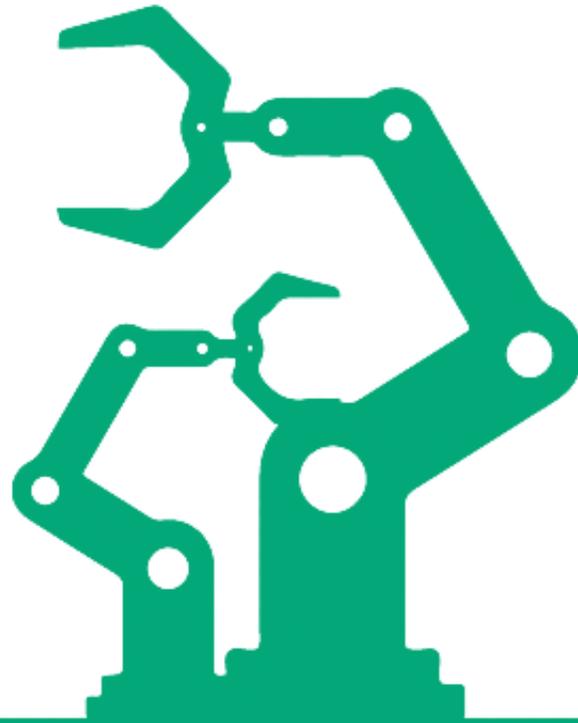
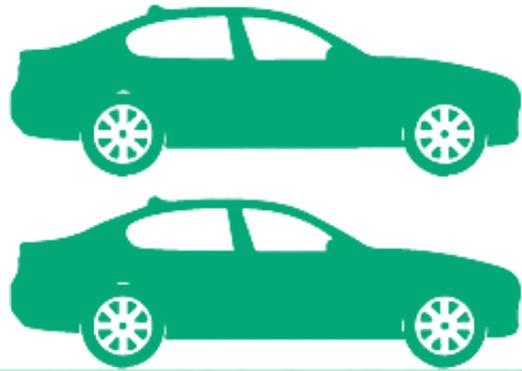
IEEE



AI ETHICS: 'FAT' PRINCIPLES

- **Fairness:**
no bias or discrimination
- **Accountability:**
responsibility for AI-based decisions
- **Transparency:**
openness about datasets
and explainable data processing





INDUSTRY 1.0

MECHANIZATION,
WATER POWER,
STEAM POWER

INDUSTRY 2.0

MASS
PRODUCTION,
ASSEMBLY LINE,
ELECTRICITY

INDUSTRY 3.0

COMPUTER,
ELECTRONICS
AND
AUTOMATION

INDUSTRY 4.0

CYBER
PHYSICAL
SYSTEMS



SOCIETY 5.0

Hunting
Society

Agrarian
Society

Industrial
Society

Information
Society

Digital
Society

PLOUGH

STEAM ENGINE

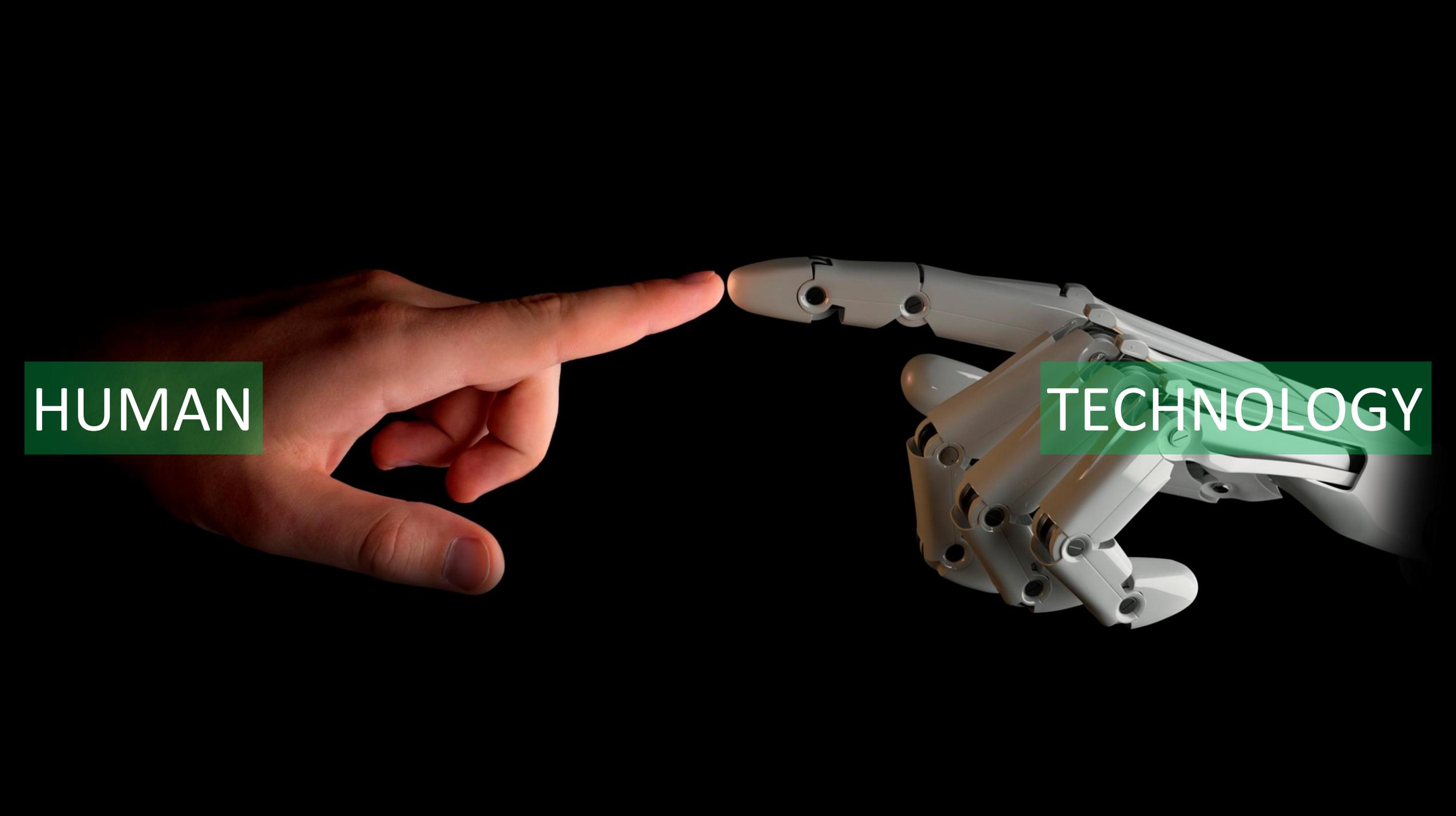
COMPUTER

4TH REVOLUTION



UNESCO



A human hand on the left and a white robotic hand on the right, with their index fingers touching at the tips. The background is black. Two green rectangular boxes with white text are overlaid on the image: 'HUMAN' on the left and 'TECHNOLOGY' on the right.

HUMAN

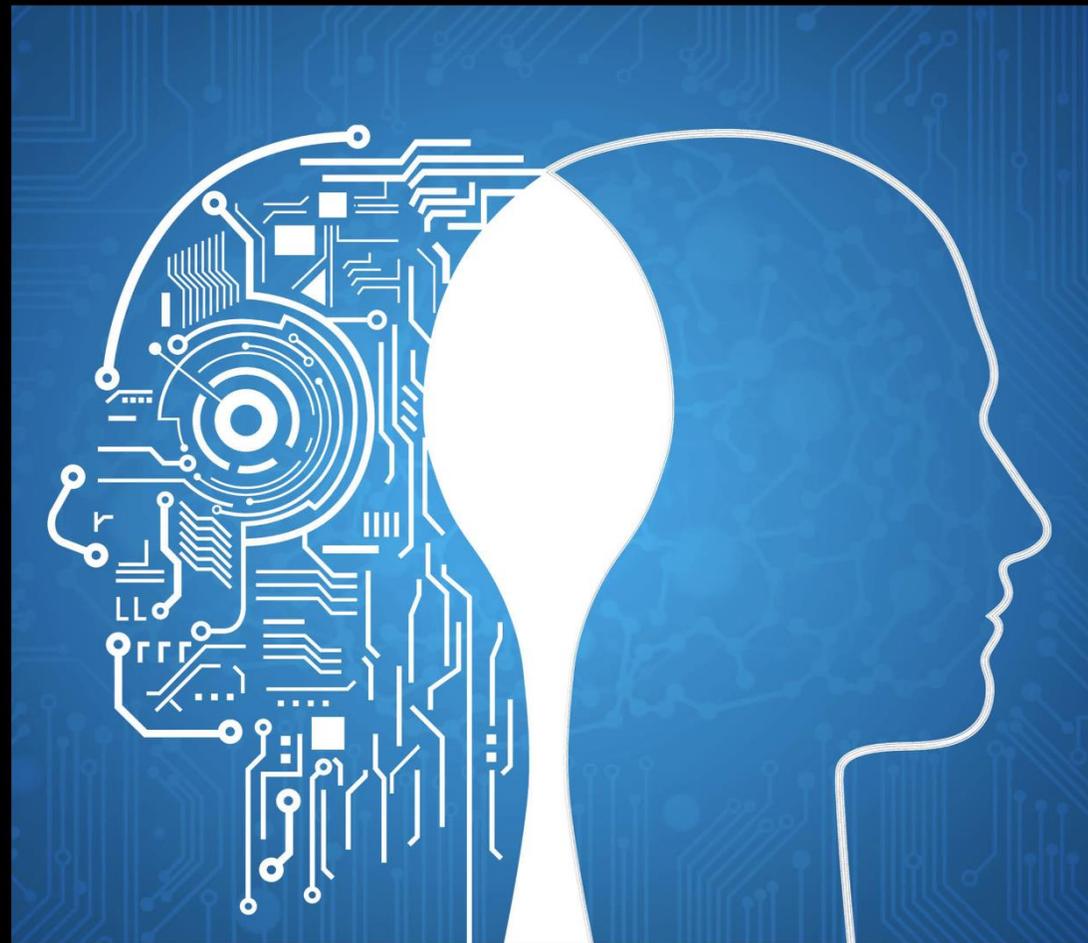
TECHNOLOGY



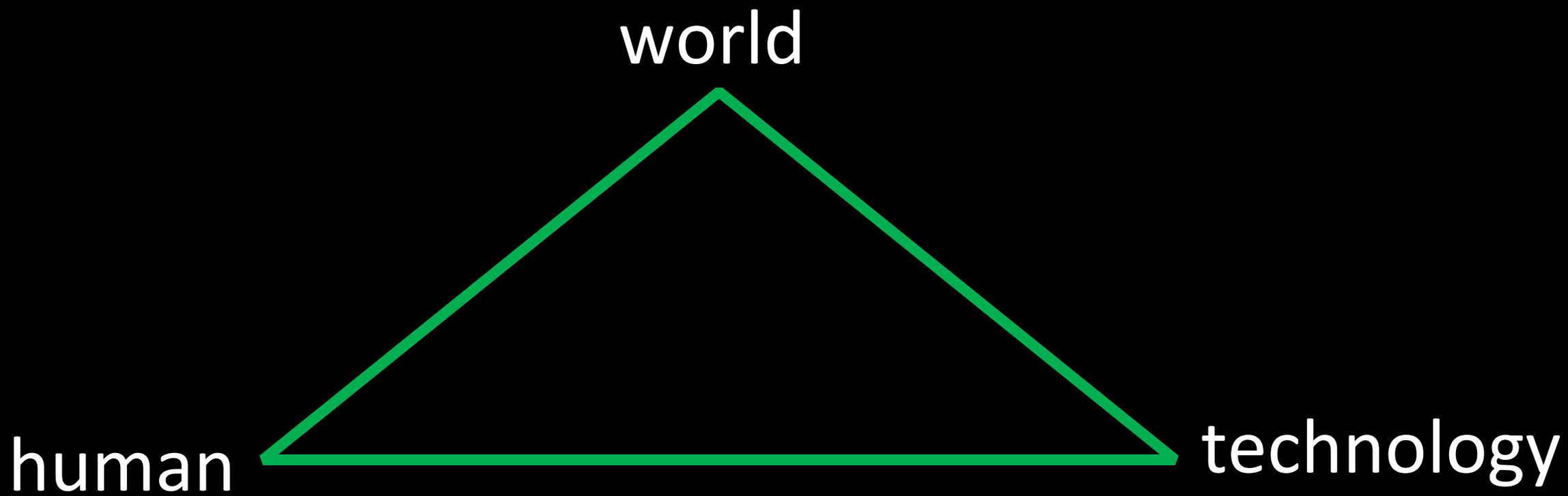
HUMAN

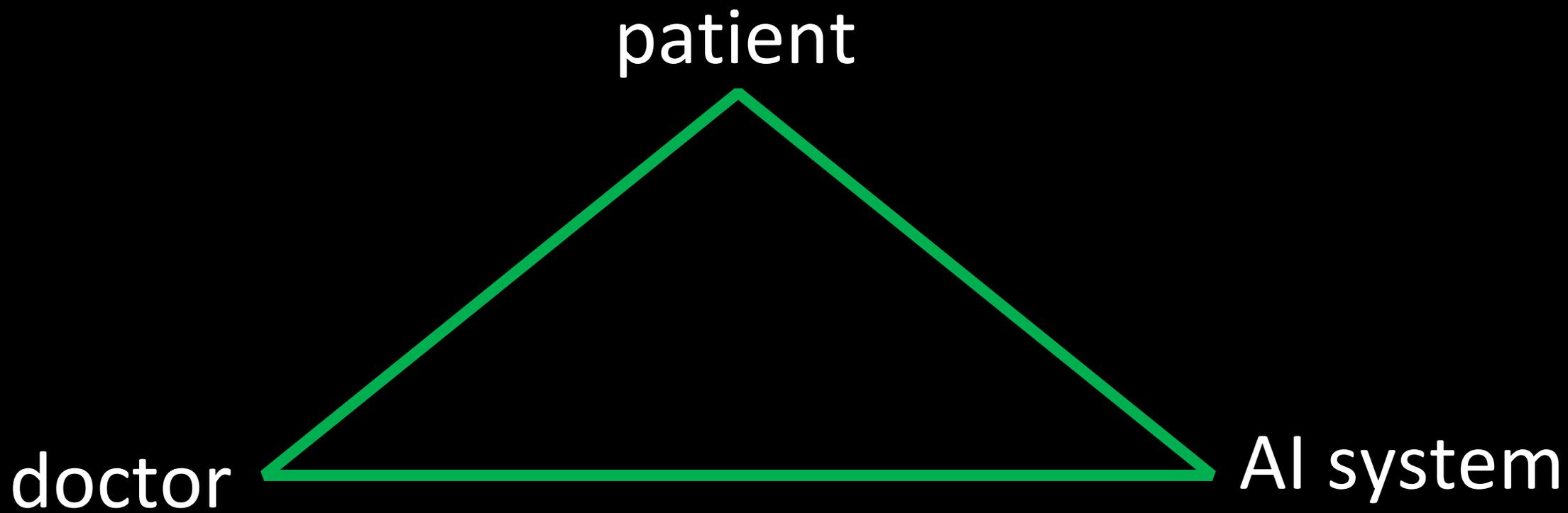
TECHNOLOGY

WORLD











Human

Technology

World

TECHNOLOGICAL ETHICS

1. Moral quality of impact of technology

– *mediated actions / practices and interpretations / frameworks*

2. Impact on moral agency

– *mediated moral actions and decisions*

3. Impact on morality

– *mediated moral frameworks*

GUIDANCE ETHICS

1

From inside,
not from outside

ACCOMPANIMENT versus
ASSESSMENT

2

Positive,
not negative

FOCUS ON VALUES

3

Bottom-up,
not top-down

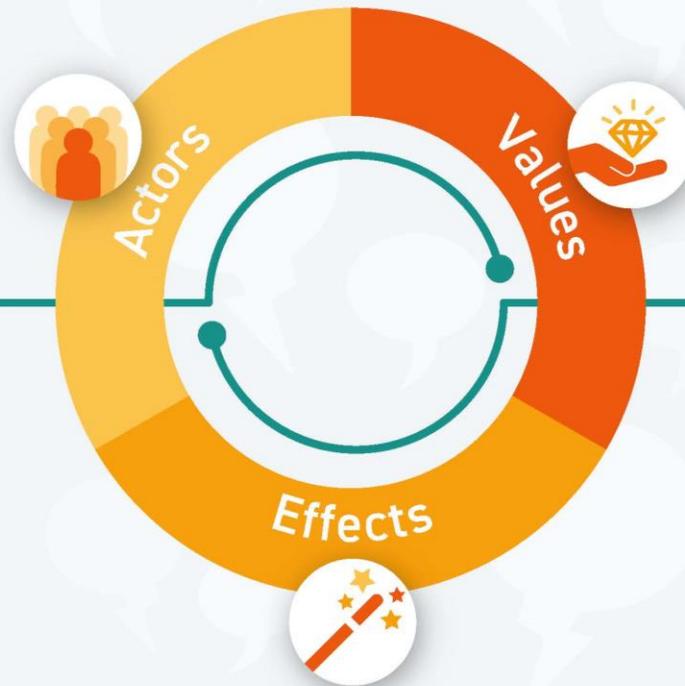
CITIZEN ETHICS
STAKEHOLDER ETHICS

Guidance ethics approach

Stage 1
Case



Stage 2
Dialogue



Stage 3
Options for action

