Digital Systems
From Sensor to Decision

Dr. Tomas Eric Nordlander
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AI: the hype, the trust, and the potential

Advice regarding Norway's AI strategy

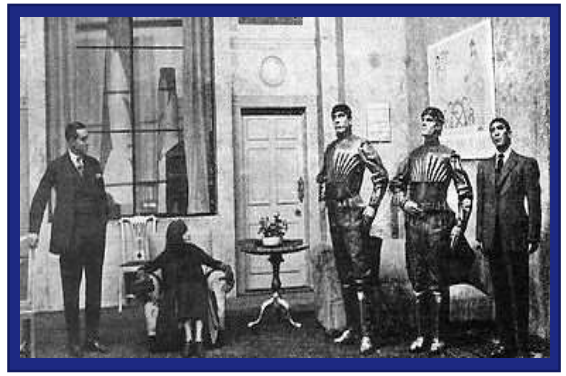
Talos protecting Crete

Greek Mythology

Pierre Jaquet Droz's "writer"

1774

Rossumovi Univerzální Roboti



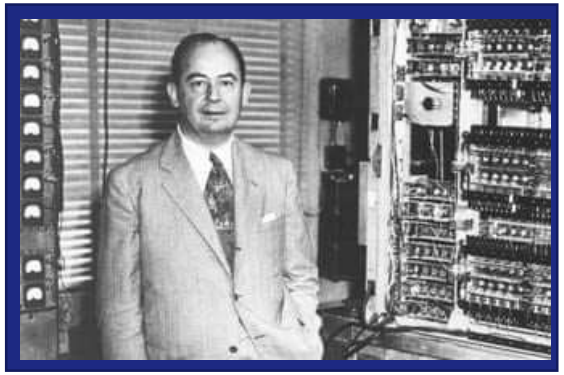
1921

Dartmouth Conference

1956

1948

John von Neumann



1903-1957

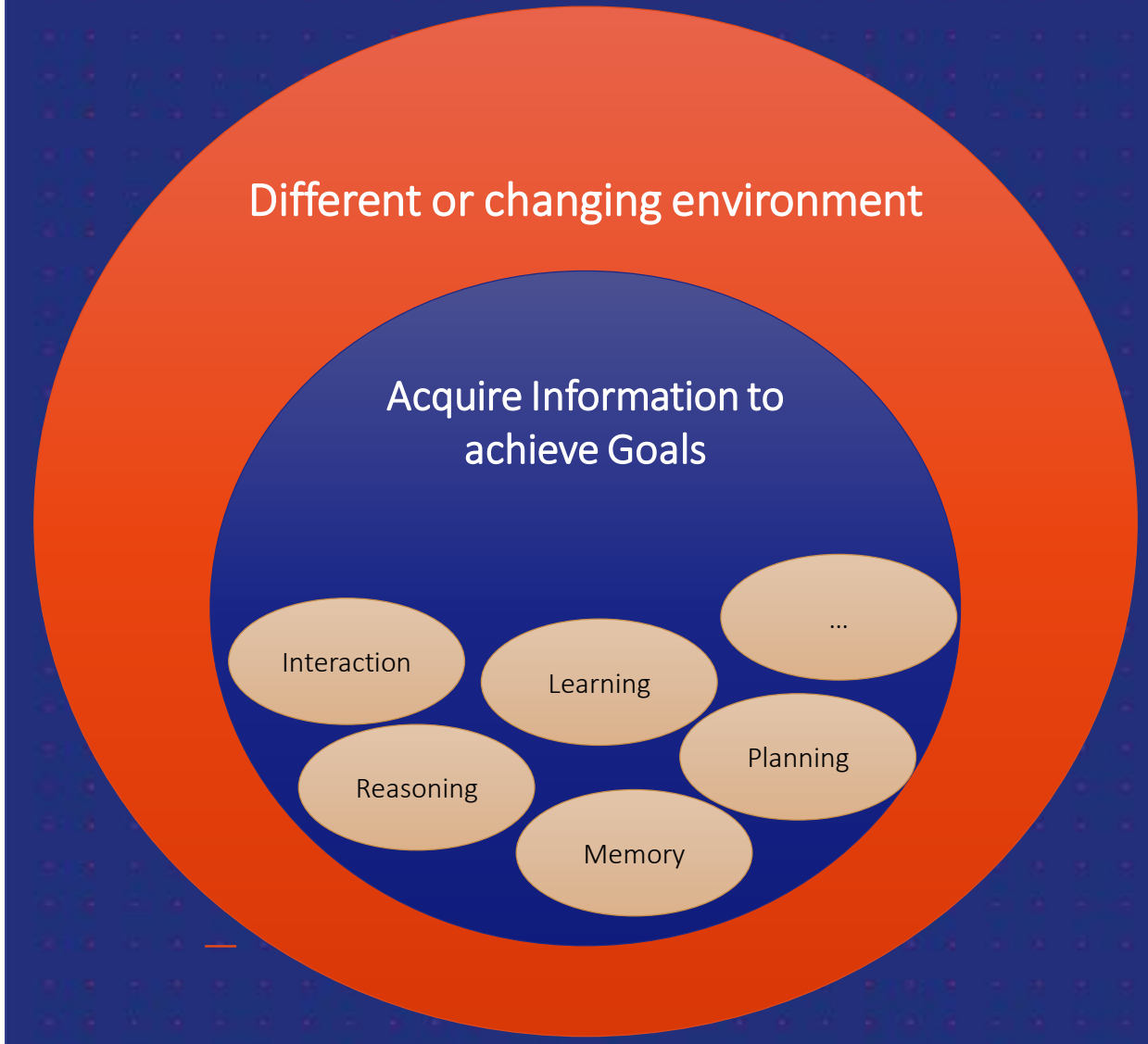
Alan Turing

1912-1954

Artificial Intelligence

Definition:

“Intelligence demonstrated by machines and software”

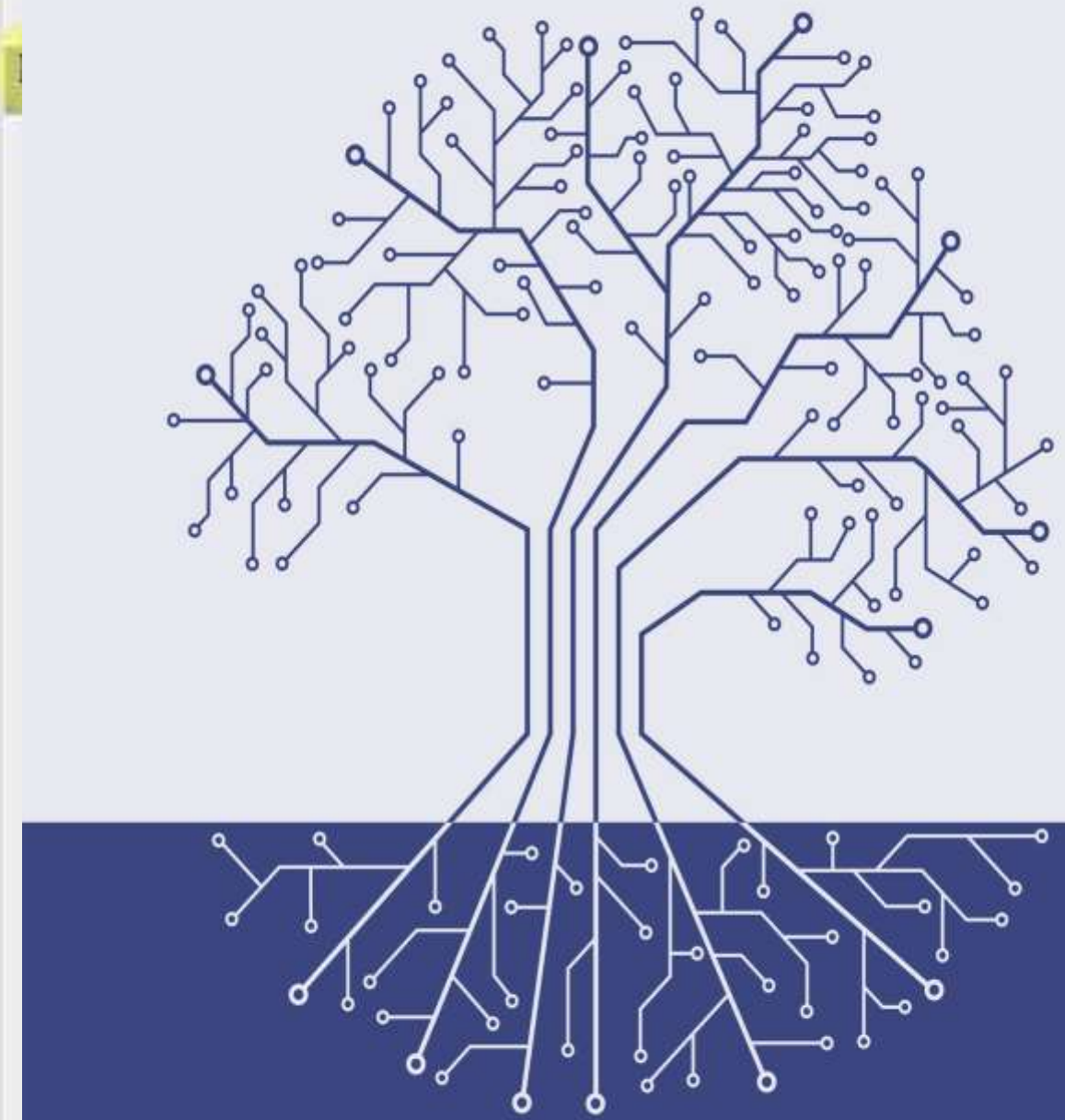


Alan Bundy (Ed.)

Artificial Intelligence Techniques

A Comprehensive Catalogue

Fourth, Revised Edition

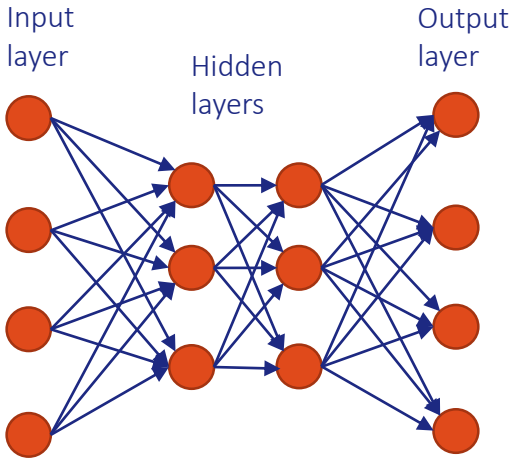


Symbolic vs. Subsymbolic AI

- Symbolic AI: Models make sense to humans
  - White box (e.g. expert system)

```
(apple(isa fruit)
       (shape round)
       (colour green)
```

- Subsymbolic AI: modelling the problem is inspired by the neuron. Let knowledge and planning emerge.
  - Black box (e.g. Neural Network)



AI & Seasons

DARPA funds
AI progress and too large claims

1956

The Lighthill report
Scale combinatorial problem.

1973-1980

DARPA funds
Expert System
Japan 5th generation

1980

Hardware Changes
Expert System
Over promise

1987-1995

DARPA funds
…

1995 - today

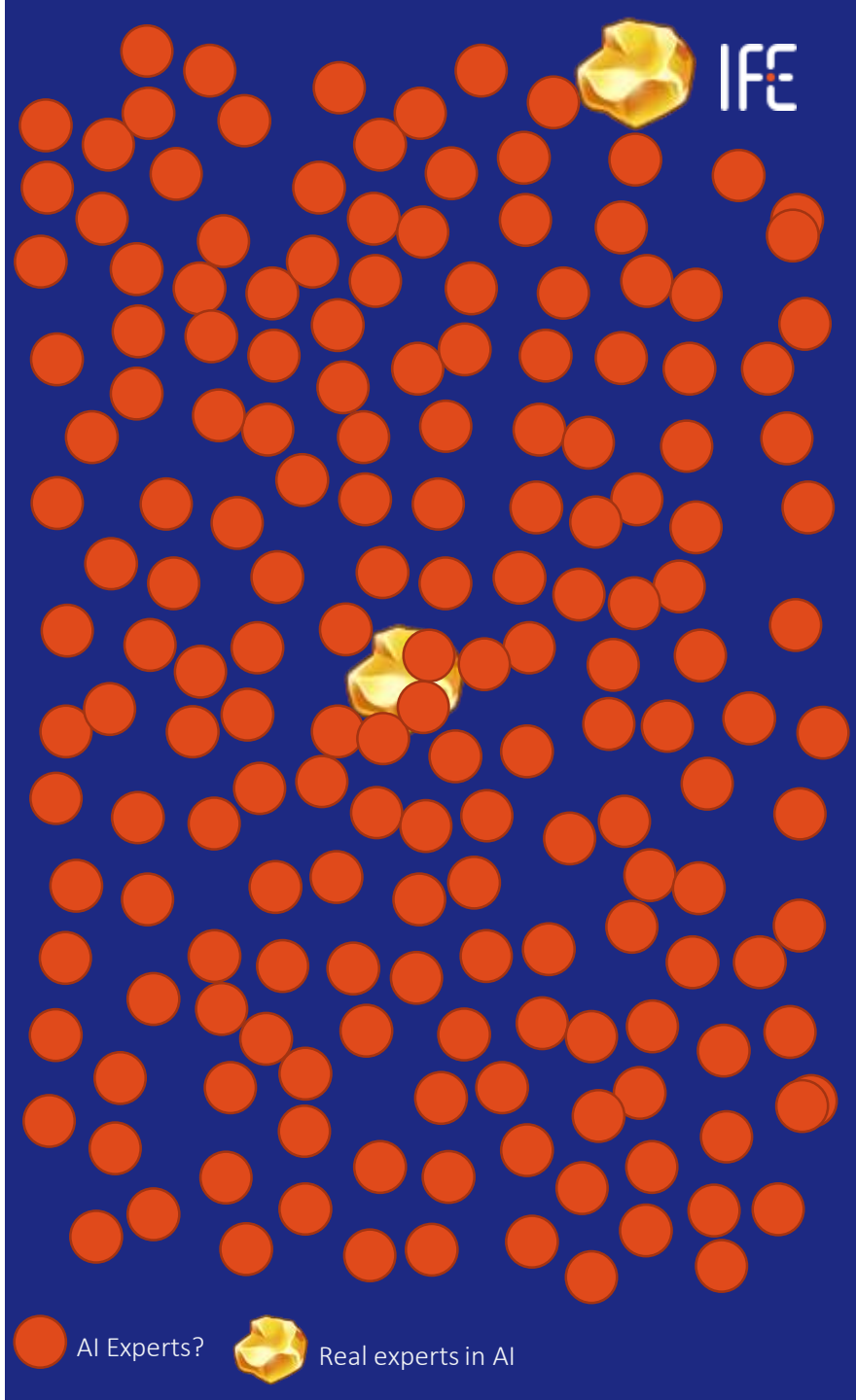
Today it is warm

- Large Promises
- Increase AI funds
  - Ad AI to your startup name to attract funds
  - Opportunistic name changes (e.g. statistics becomes AI)
- AI Experts appears everywhere without academic or AI track record.
- Is it getting colder???

But AI it is here to stay

Be sceptic

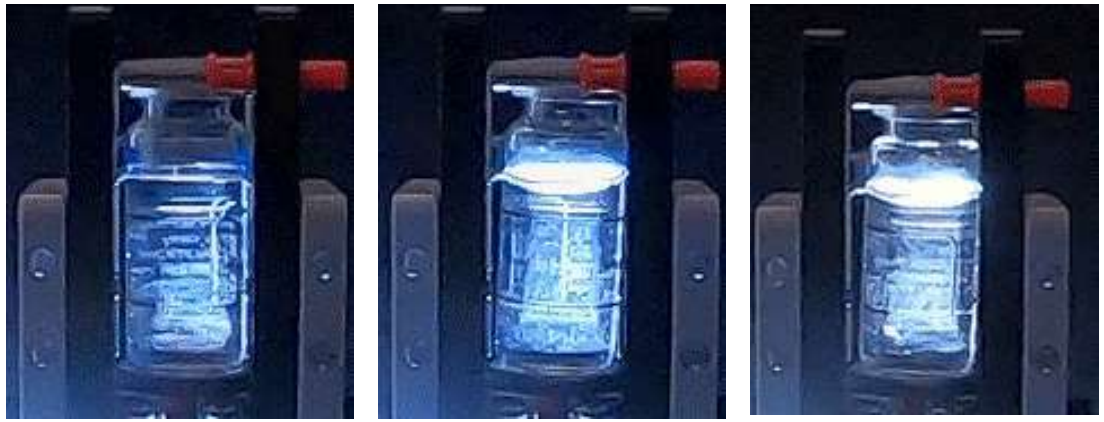
- AI company
  - Do you have customer(s)?
  - Do you have a finished product?
  - Does the product actually apply AI?
- Research Institute/University
  - How many full time AI researcher?
  - How long have you focused on AI?
  - Show me something you done?



Examples

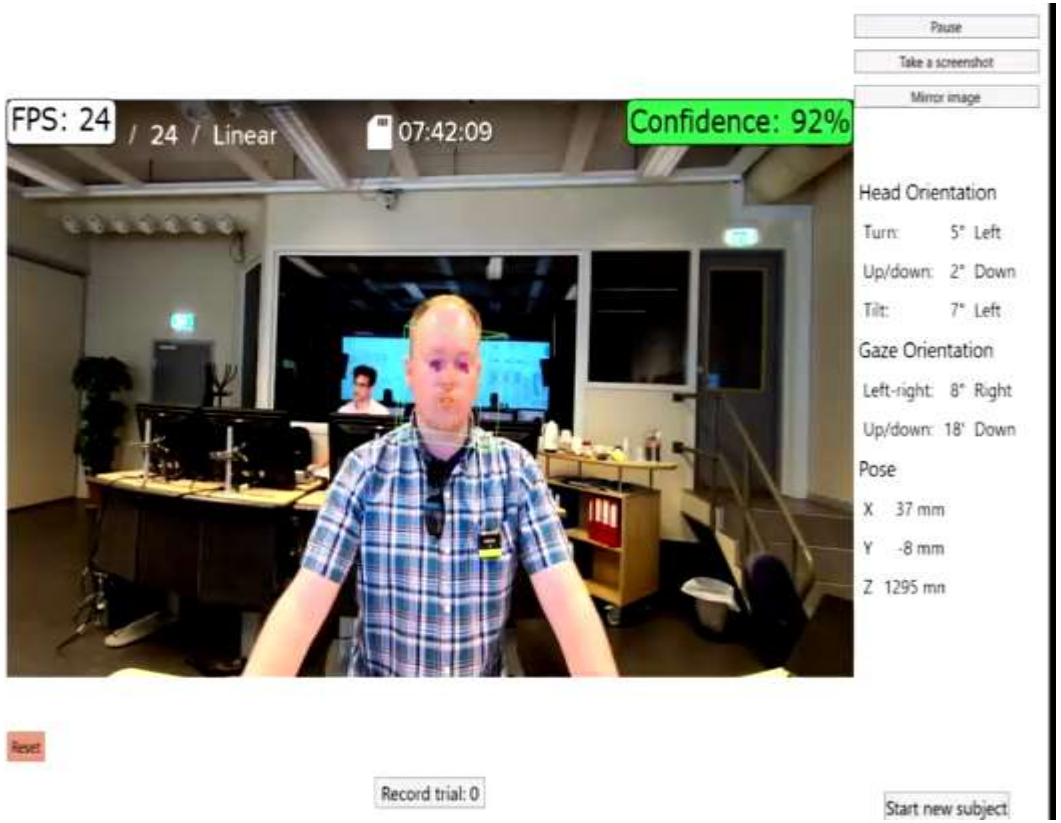
Automatic road damage detection & classification

Automatic inspection of radiopharma vials



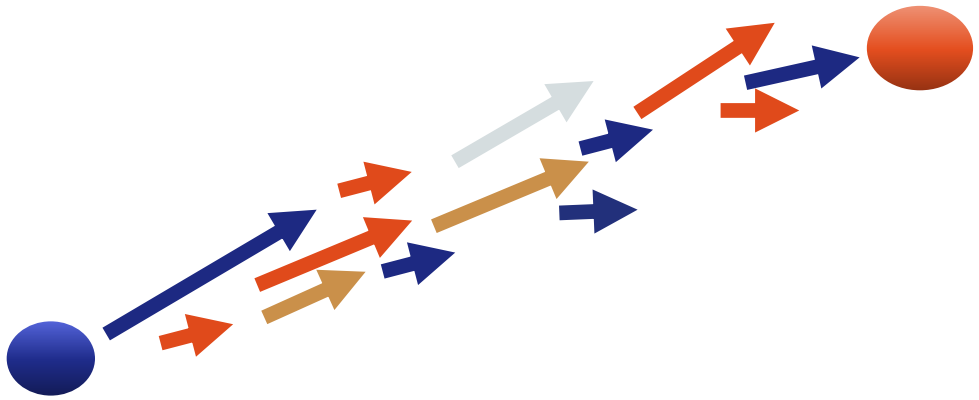
Examples

Automatic real-time user monitoring using machine learning

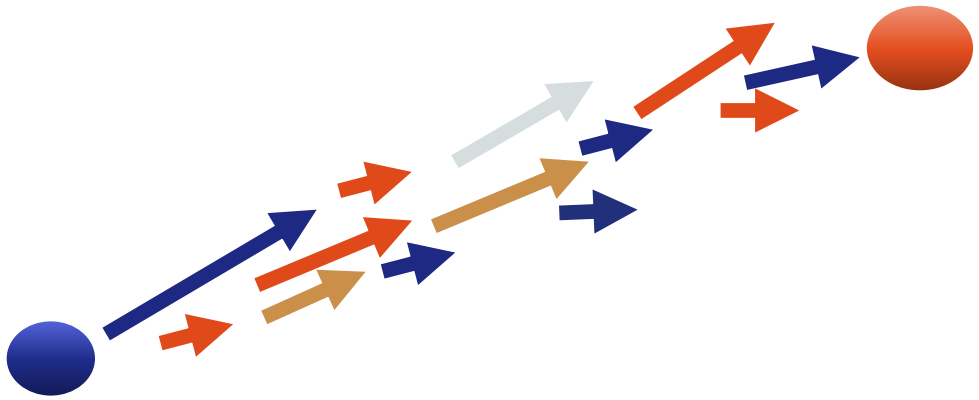


Norwegian AI Strategy

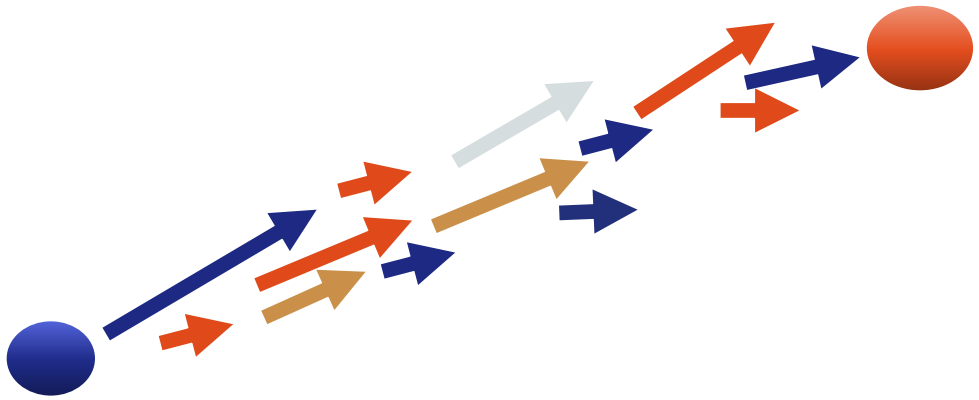
- Where are we now?
- Where and what is our goal?
- How will we get there?

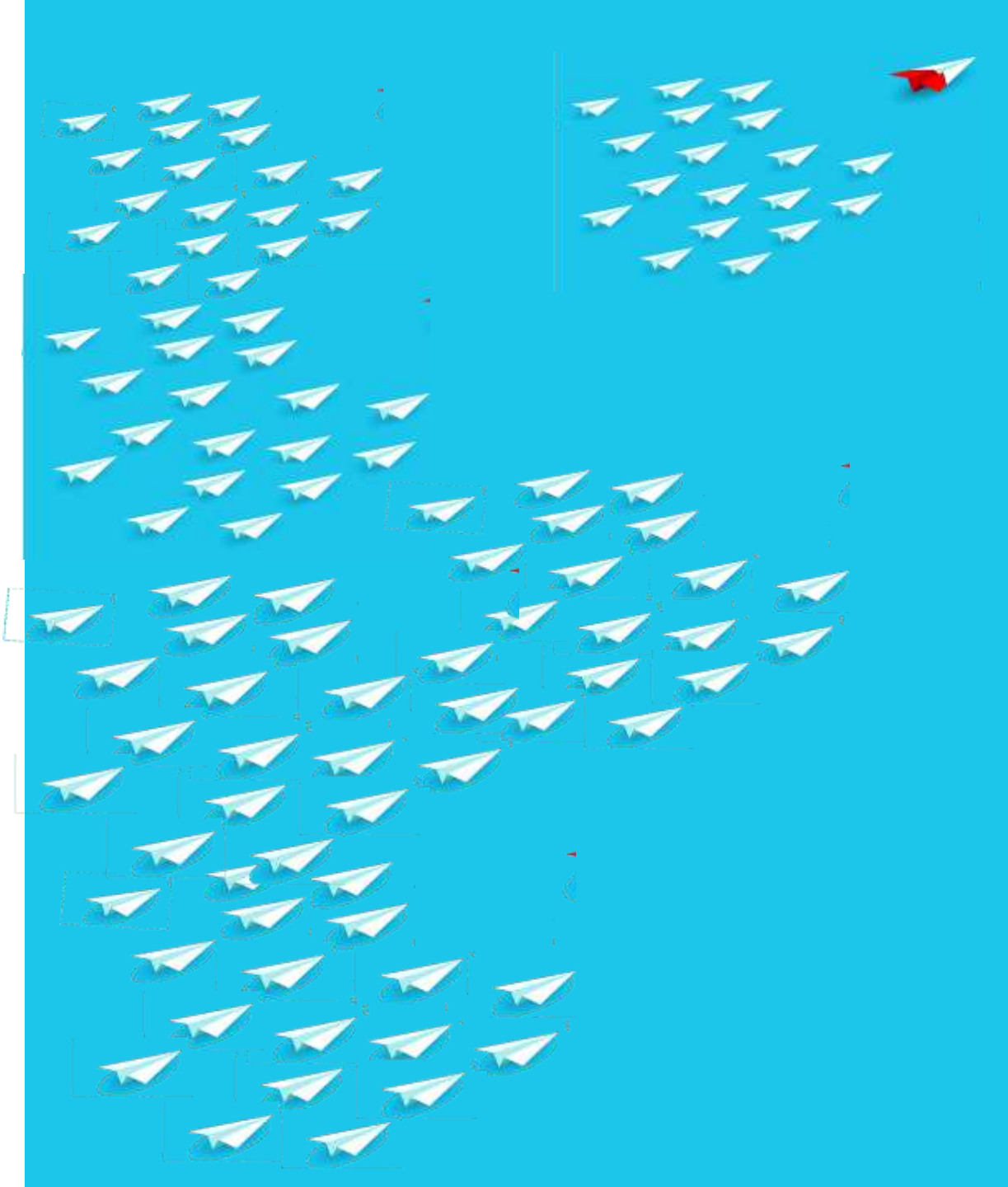


Who should be involved boards and working groups?



Norway & AI





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Q&A

References

- Chance Calum, Surviving AI
- Nordlander Tomas Eric, AI Surveying: Artificial Intelligence in Business
- MMC Ventures, The State of AI:2019 divergence https://www.stateofai2019.com/
- Lighthill report https://www.youtube.com/watch?v=03p2CADwGF8 &
- https://en.wikipedia.org/wiki/Lighthill_report
- Jerre Jaquet-Droz the writer, Availible from http://www.jaquet-droz.tv/video/9308963/the-writer-by-pierre-jaquet-droz
- Rossumovi Univerzální Roboti https://en.wikipedia.org/wiki/R.U.R.
- Alan Turing https://www.bl.uk/people/alan-turing
- John von Neuman https://www.ias.edu/von-neumann

Understanding both perspectives

What does the *human* need to more effectively interact and collaborate with the technology?

What does the *technology* need to more effectively interact and collaborate with the human?

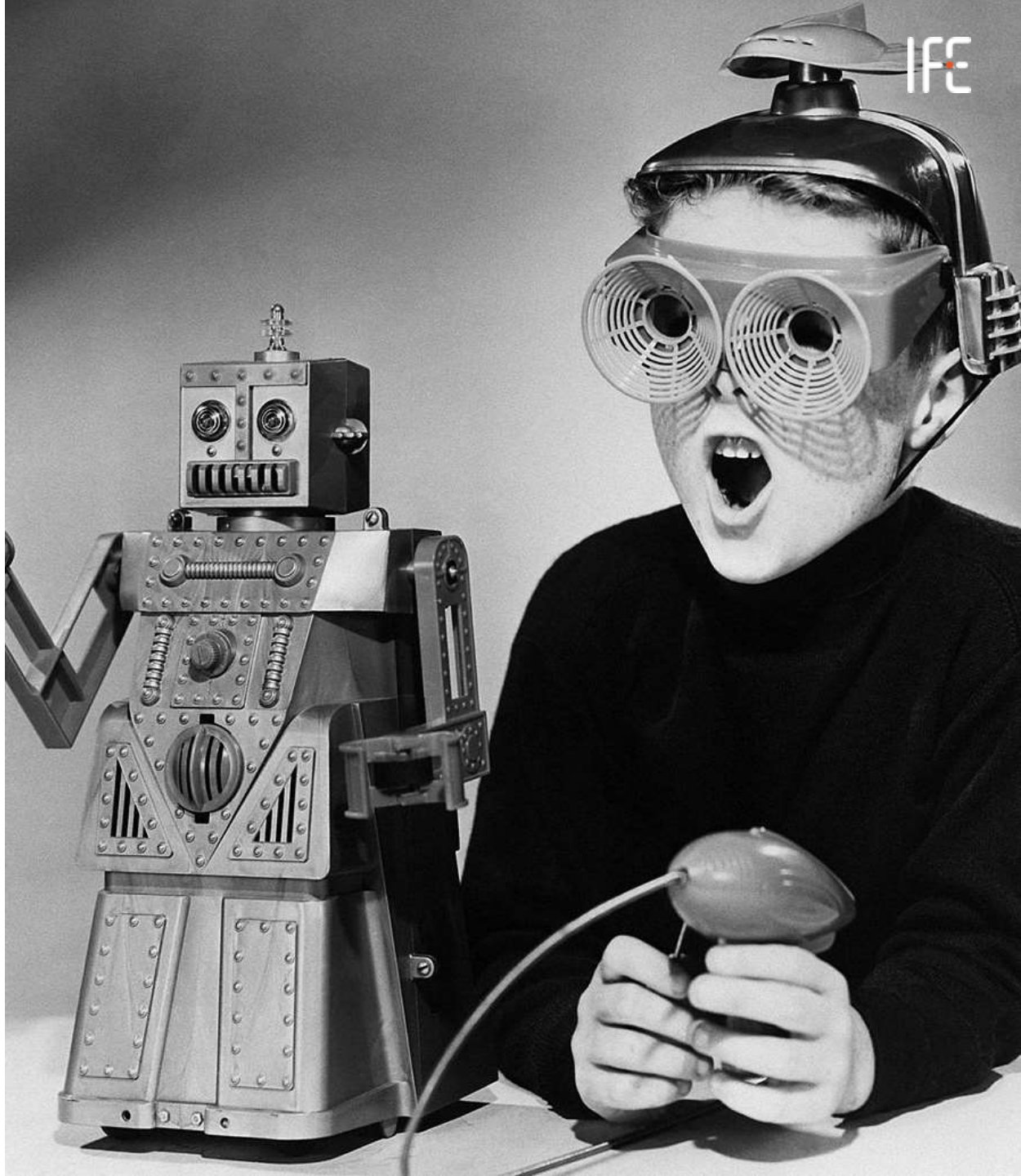
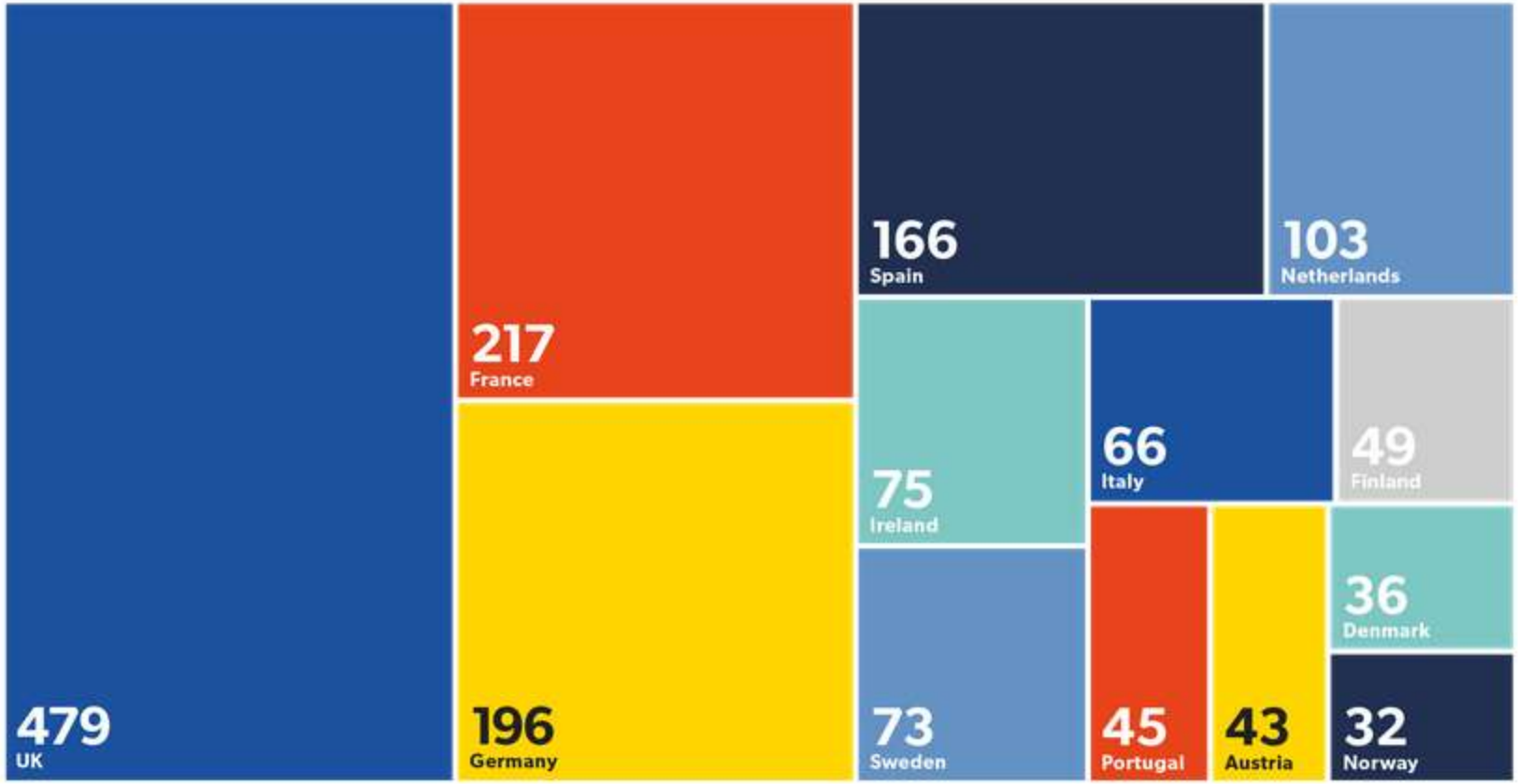


Fig 75. With twice as many AI startups as any other country, the UK is the powerhouse of European AI entrepreneurship



Source: MMC Ventures, Beauhurst, Crunchbase, Tracxn

Investerer 300 millioner kroner i Halden-firma

INVESTERER: Et tysk og et amerikansk investeringsselskap satser nå 300 millioner kroner i eSmart på Remmen. Foto: eSmart

Av Gunnar Paulsen

27. juni 2019, kl. 13:10