## Artificial Intelligence



## Alan Turing John von Neumann

Marvin Minsky John McCarthy

- Symbolic computation
- Programmed by hand
- Brittle data representation

# Cybernetics/neural networks



#### Norbert Wiener Warren McCulloch & Walter Pitts

- Adaptive
- Distributed representation
- Struggle with symbolic comp.
- Non-transparent

### Vector Symbolic Architectures (aka Holographic reduced representation or Hyperdimensional computing)







## Tony Plate

Ross Gayler

Pentti Kanerva

- Distributed representation
- Symbolic computation
- Adaptive
- Transparent