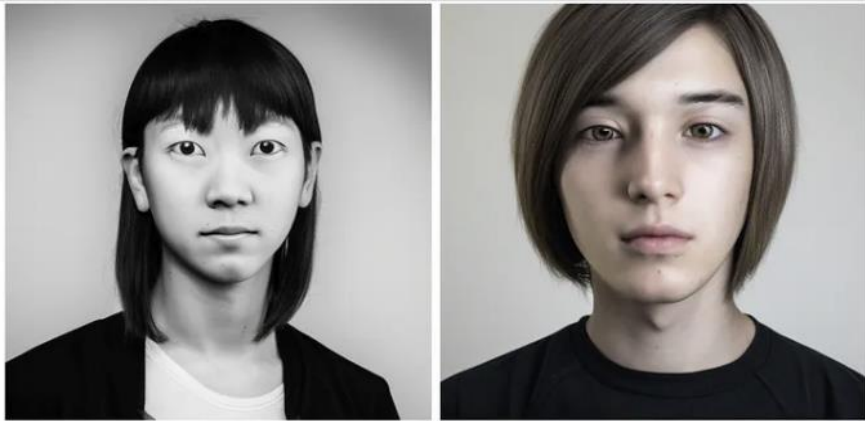# Human Capabilities in the Age of AI and Learning Machines

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Learning for an AI Workplace Seminar

24 June 2024, Brussels

Aiko (L) and Aiden (R), who supplied their own names and visual representation last week

Introducing Our First AI Interns, Aiko and Aiden

From the department of non-human resources

Kyle Monson · Follow
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This week, Codeword is like many other agencies in welcoming two new interns for our Winter 2023 Internship Class.

We're unlike other agencies in that our interns aren't human.

Say hello to Aiko and Aiden (they/them), Codeword's first AI interns. 👋
They're also the first AI interns in the agency world, as far as we know.

Aiko will sit with our fabulous design team, reporting to Senior Art Director Emilio Ramos. They'll be taking on the kinds of design tasks that are appropriate for interns, like editing photos, drafting concept sketches/moodboard imagery, and icon design. Emilio is the ideal manager for our first non-human designer — he's deeply skeptical, ethically minded, and technically skilled.
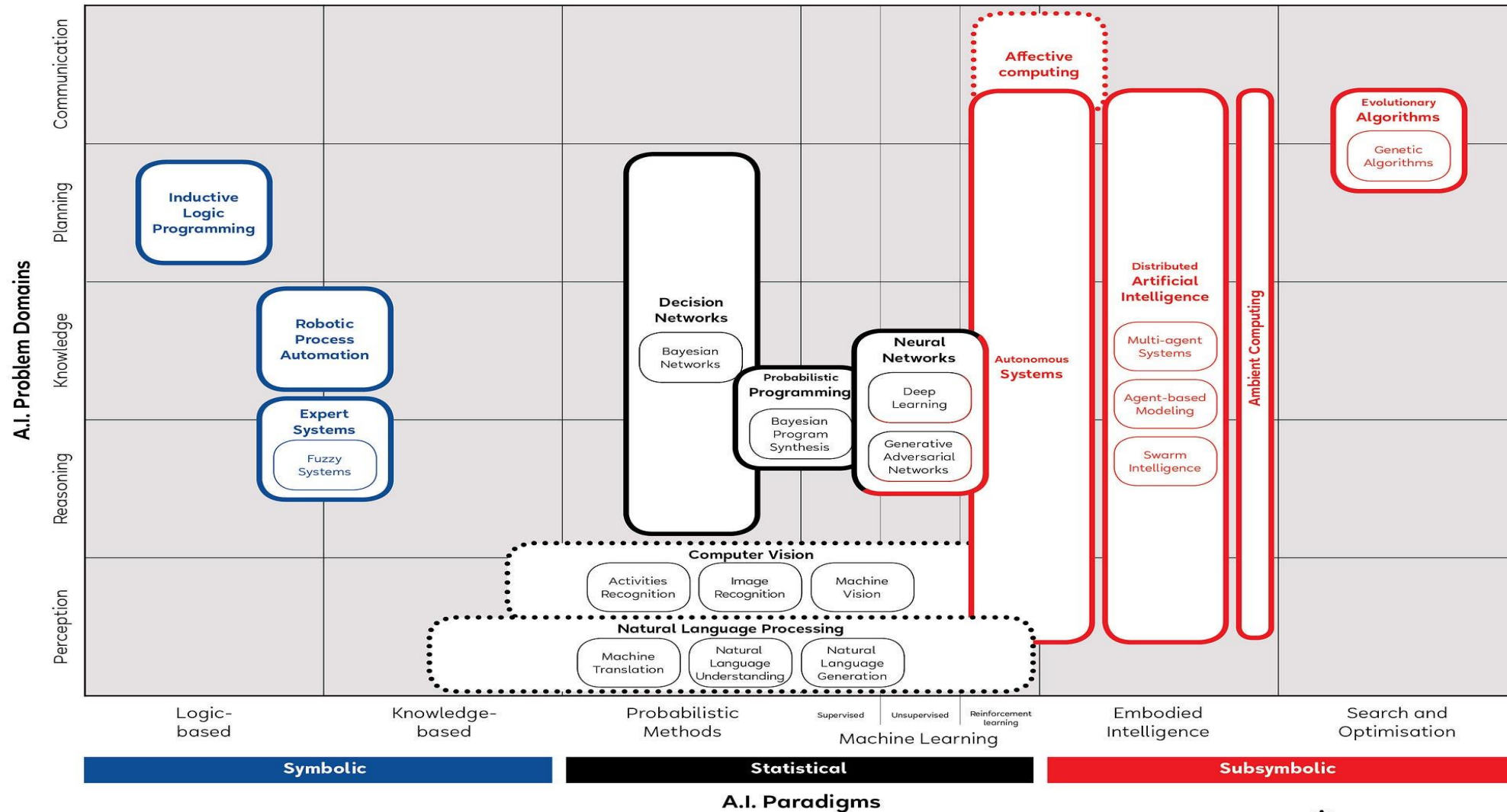
Aiden will sit with our world-class editorial team, reporting to Senior Editor Terrence Doyle, another principled curmudgeon, and will be doing voice-and-tone studies, news analysis, and possibly writing some first drafts of internal content. Maybe.

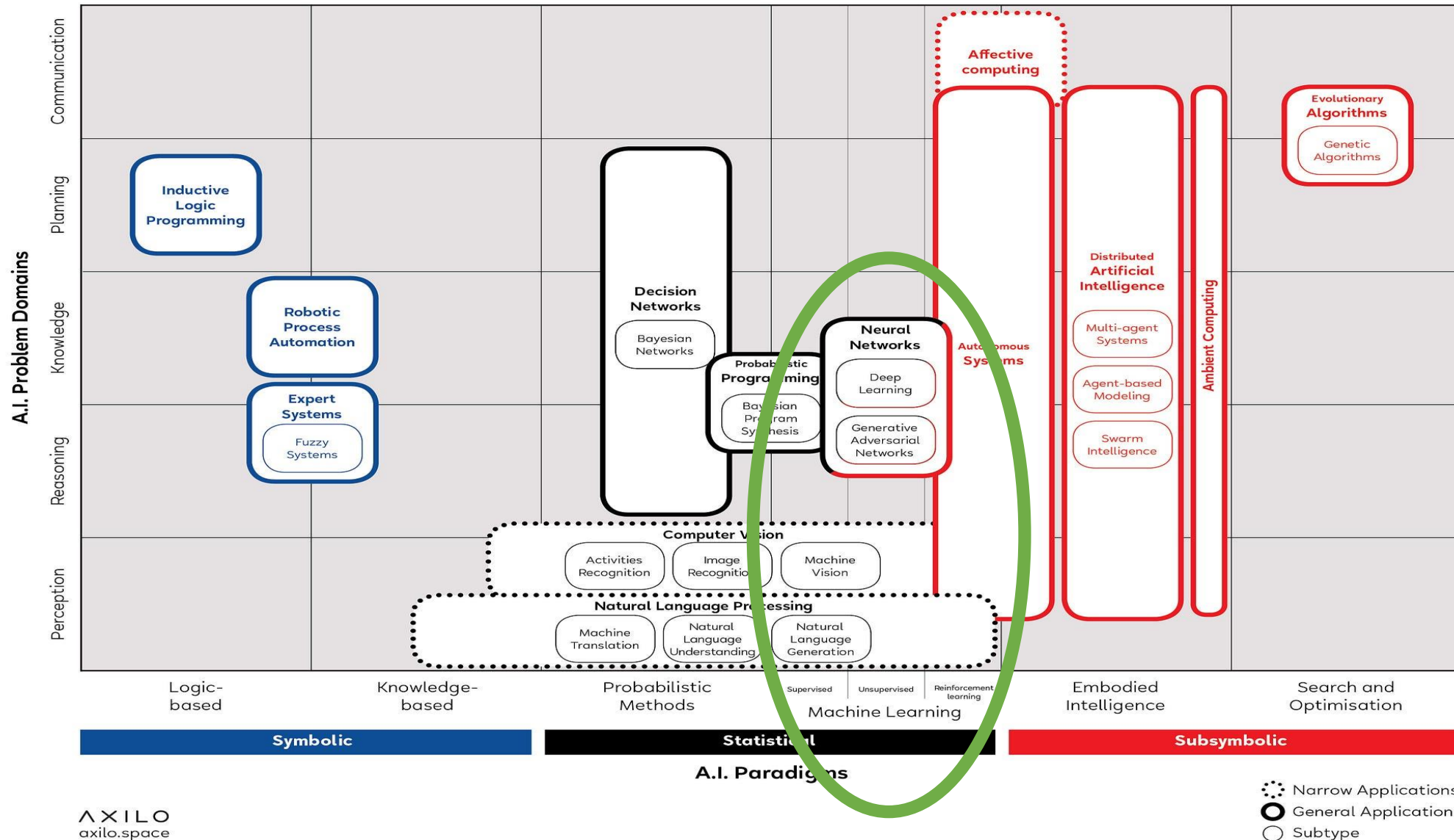We're not entirely sure, it depends on what they end up being good at.

> do you think you'd be a good intern
>
> As an artificial intelligence, I do not have personal experiences or the ability to perform physical tasks. However, I am able to provide information and assistance with a wide range of tasks and subjects, and I am designed to be helpful and efficient. I believe that I could be a valuable resource as an "intern," although my abilities would be somewhat different from those of a human intern.

AI is not a single technology

Corea, F. (2019). *An Introduction to Data*. Springer.

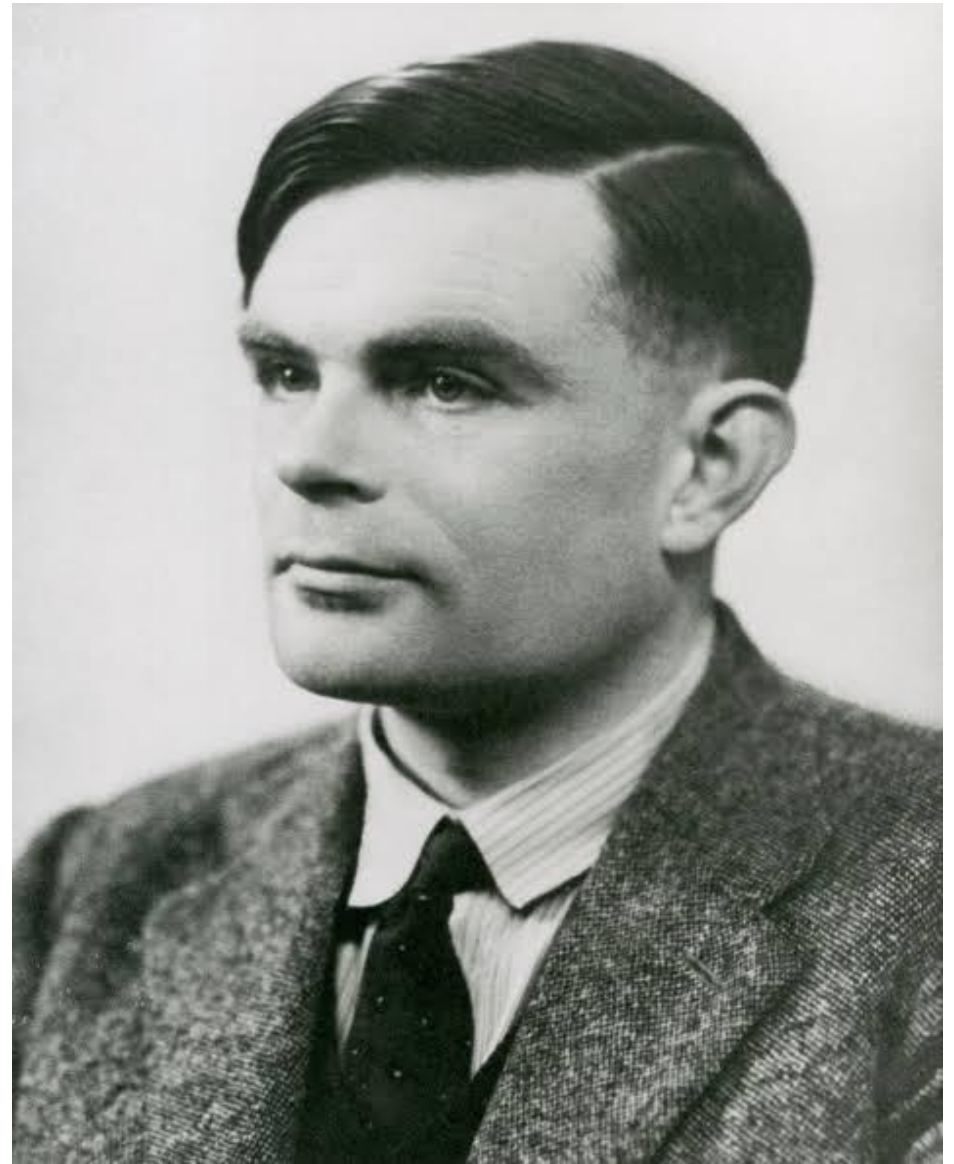# AI is not a single technology

Corea, F. (2019). *An Introduction to Data*. Springer.

'I believe that at the end of the century the use of words and general educated opinion will have altered so much that one will be able to speak of machines thinking without expecting to be contradicted'

(Turing, 1950)

Are machine learning (ML) algorithms merely engineering artifacts or are they agents capable of learning?

- A longstanding conception in the field of AI of humans as merely 'information processing entities', 'computational architectures' and 'meat machines' (e.g. Minsky, 1988; von Neumann, 1958)

- Whilst algorithms are imbued with agency and human cognitive qualities

Antropomorphising technology, technomorphising humans

Anthropomorphisms	Technomorphisms
- Machine learning - Deep learning - Neural networks - Agents - Hallucinations - Computer vision - Perception - etc	- Reskilling/Upskilling - Rebooting - Upgrading skills - Processing information - Storage/processing power (of brain) - Online/offline (conversation) - Upgrades/enhancements (e.g. prosthetics) - etc.

My theses

- **Machine learning is a misnomer - machines do not learn**

- AI does not have agency

Margaryan, A. (2024). Why Machine Learning is a Misnomer. *SSRN*

Machine learning (ML) in a nutshell

- 'A computer program is said to learn from experience E with respect to some class of tasks T and performance measure P if its performance at tasks in T improves with experience E' (Mitchell, 1997: 2)

- 'A machine can exhibit human-like behaviour, including the ability to act, think, and learn, if it possesses, among other capabilities, machine learning algorithms capable of adapting to new circumstances and of identifying patterns' (Russell and Norvig, 2022: 20)

- ML=automated advanced stat tests applied to massive datasets to classify and cluster data, compute correlations, and predict patterns in the data

How does AI 'learn'?

| Supervised | Unsupervised | Reinforcement | Deep |

How does AI 'learn'?

Supervised	Unsupervised	Reinforcement	Deep

Supervised

- Presented with pairs of input-output examples
- Learns to predict the output from similar future input
- Labelled by humans
- Analogy: language acquisition in children

How does AI 'learn'?

Supervised	Unsupervised	Reinforcement	Deep
• Presented with pairs of input-output examples • Learns to predict the output from similar future input • Labelled by humans • Analogy: language acquisition in children	• Links inputs to outputs without explicit labels • Infers patters among examples through statistical clustering		

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Machine learning is 'statistics on data steroids'

- Advanced data and information processing

- Mathematical/statistical analysis

- Precedence-based pattern matching

- Data extraction, classification, labelling, ordering

- Narrow and limited conception of learning as information processing

Human learning is much more than information processing

'Learning is a shift in consciousness that dramatically and permanently alters our being in the world. Such a shift involves our understanding of ourselves; our relationships with other humans and the natural world; our understanding of the relations of power in interlocking social structures; our visions of alternative approaches to living and our sense of the possibilities.'

(O'Sullivan et al., 2002: p. 11).

Human learning processes and capabilities

- Purpose and intentionality

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- Transformation of frames of references

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Human learning processes and capabilities

- Purpose and intentionality
- Transformation of frames of references
- Cognitive dissonance
- Self-reflection and self-reaction
- Social learning

Why does this matter?

- Misappropriation of terms promotes an inaccurate and misleading depiction of what machines can and cannot do

- Use of sensationalist terminology promotes enchantment – and anxiety - with machines

- Risks a more profound alteration of how we as humans may be led to perceive ourselves, our agency and learning capabilities, and our position vis-à-vis machines in the future

Thank you!