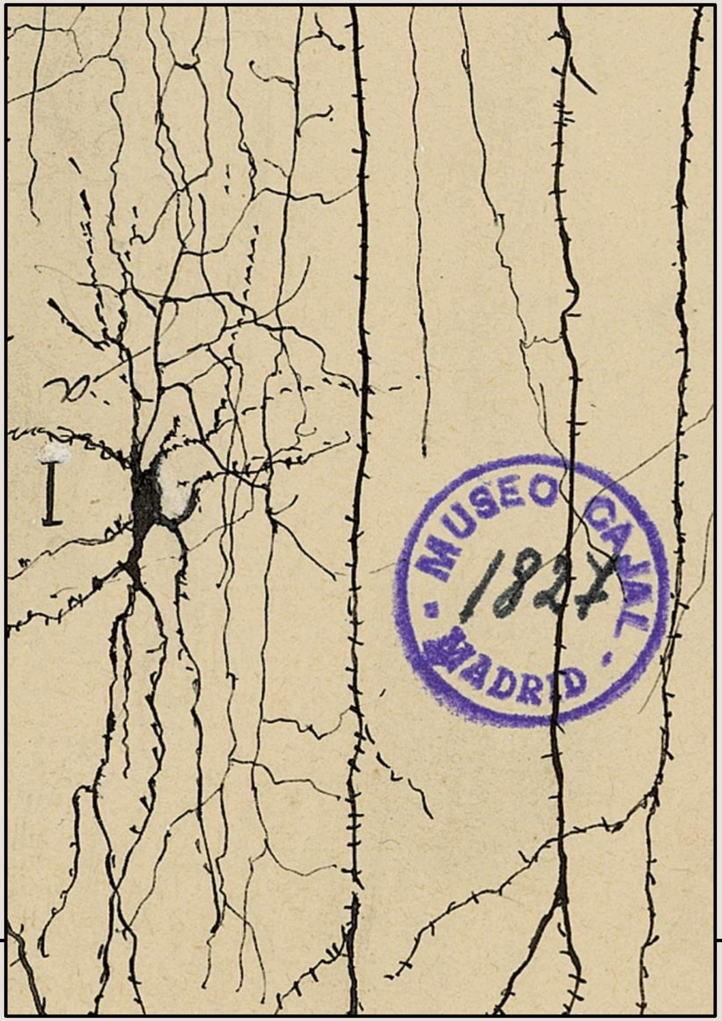
Integrating AI in education: our pedagogic vision

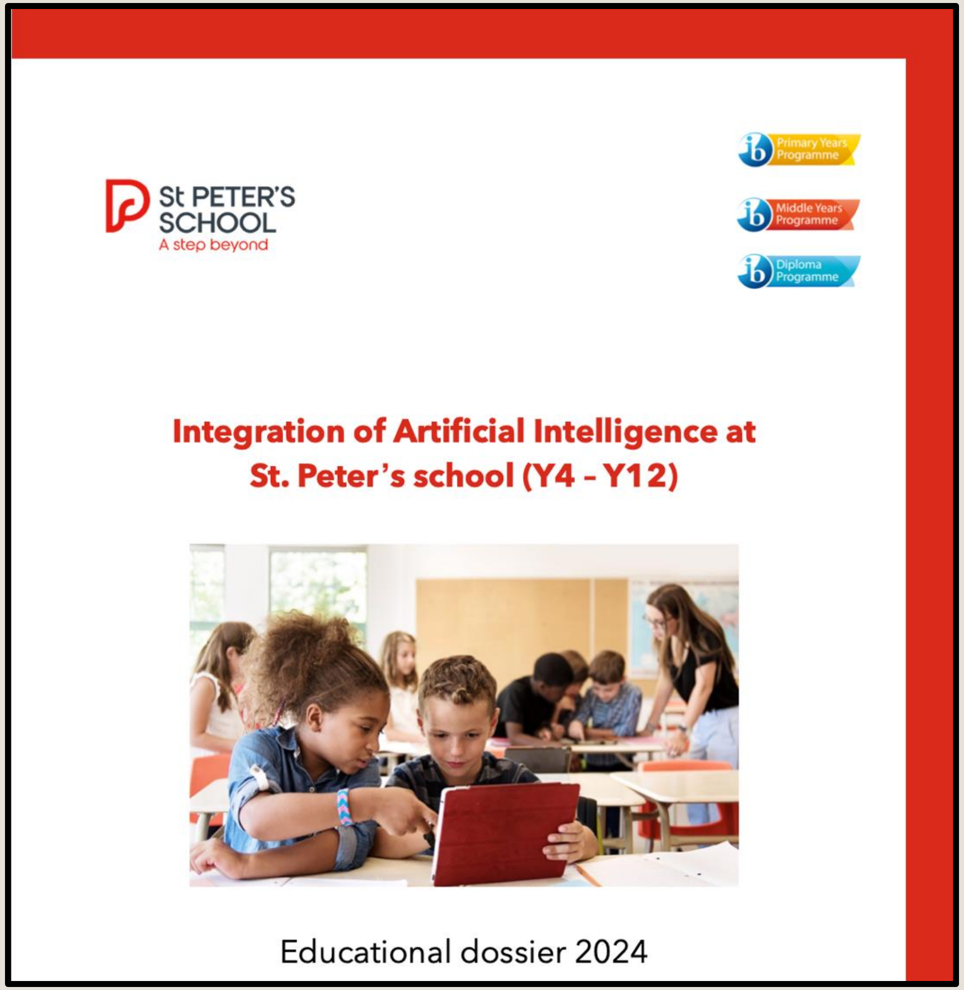


Niko Taran

Fields of Interest

What **can** AI do?	▪ **Section A**. AI curriculum I. Technical II. Practical III. Ethical
What can AI **not** do?	▪ **Section B**. The future curriculum Human abilities beyond intelligence

AI CURRICULUM

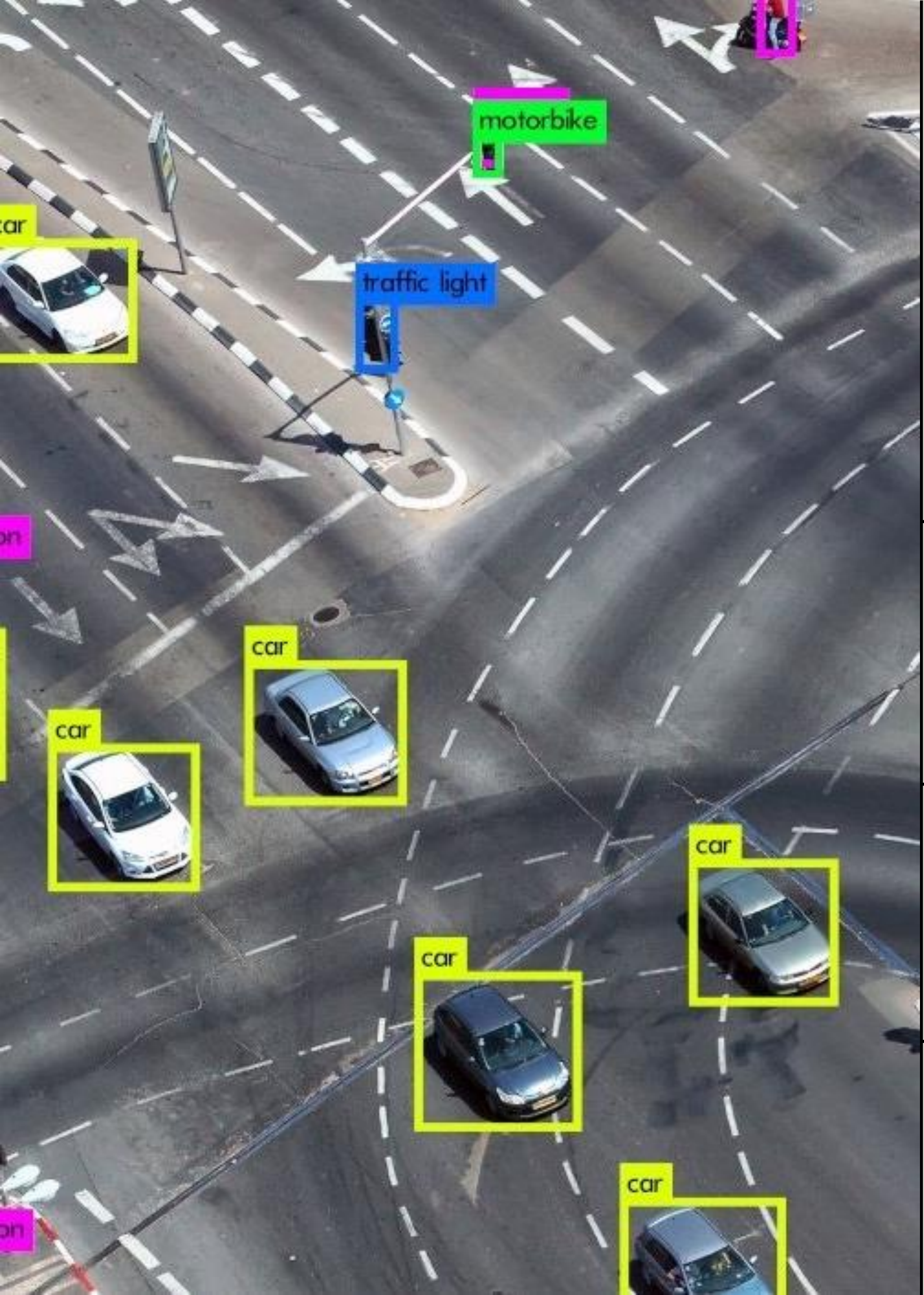

St PETER'S SCHOOL
A step beyond

Primary Years Programme
Middle Years Programme
Diploma Programme

Integration of Artificial Intelligence at St. Peter's school (Y4 - Y12)

Educational dossier 2024

	Course *Unit*	Technical	Practical	Ethical
Year 4	STEM *Brains & Computers*	✓	✓	✓
Year 5	*Current technology: A.I.*			✓
Year 6	**Interdisciplinary unit**	✓	✓	✓
Year 7	A.I. *Intelligence, Science & Art*	✓	✓	✓
Year 8	Robopsychology *Neural networks*	✓	✓	✓
Year 9	Neuroscience *Neural networks*	✓		



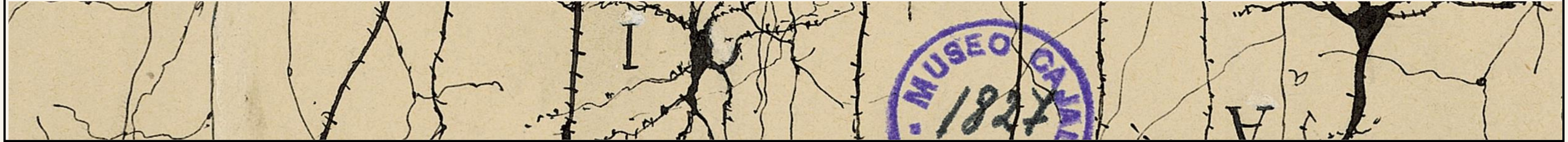
Section A

TECHNICAL

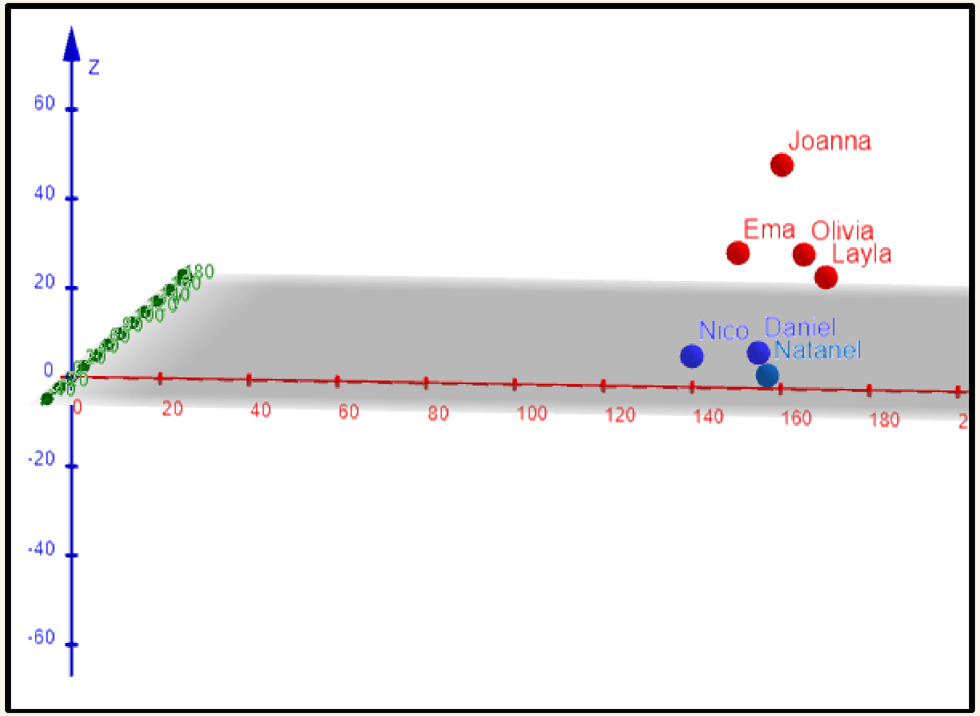
MATH FOUNDATIONS

STATISTICAL MODELS

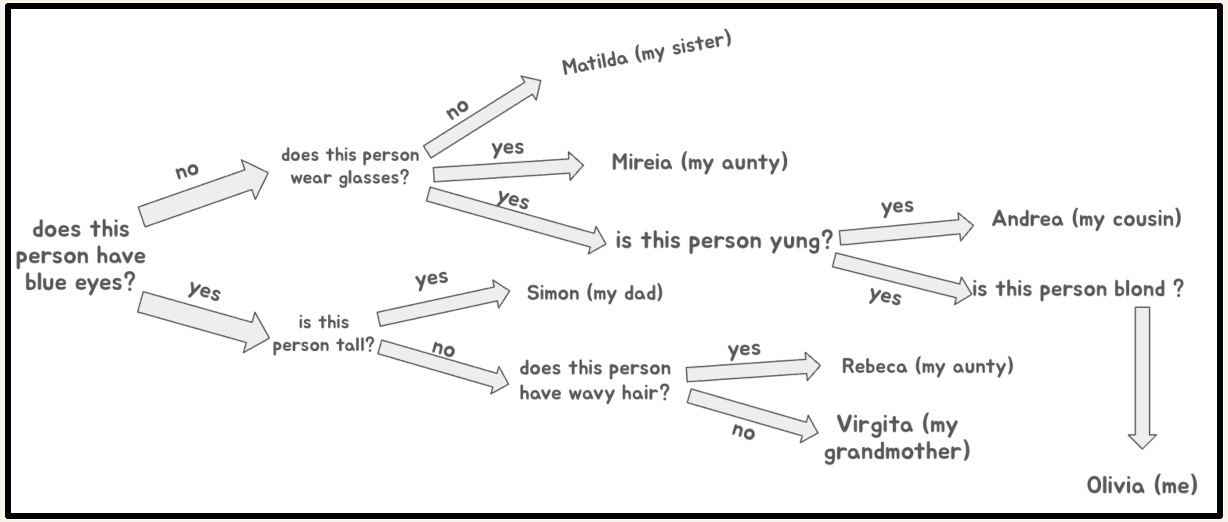
PROGRAMMING METHODS



Foundational methods for Machine Learning



- Linear Regression – SVM models

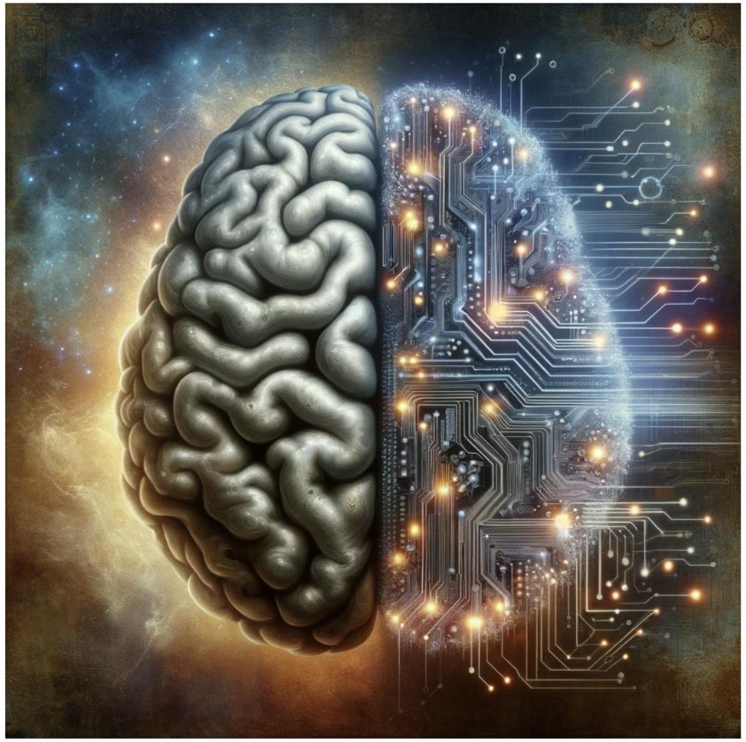


- Decision trees – Random forest

Section A

PRACTICAL

ChatGPT



Here is an image that artistically represents the convergence of natural and artificial intelligence. It symbolizes the harmony and interaction between human thought processes and AI algorithms.

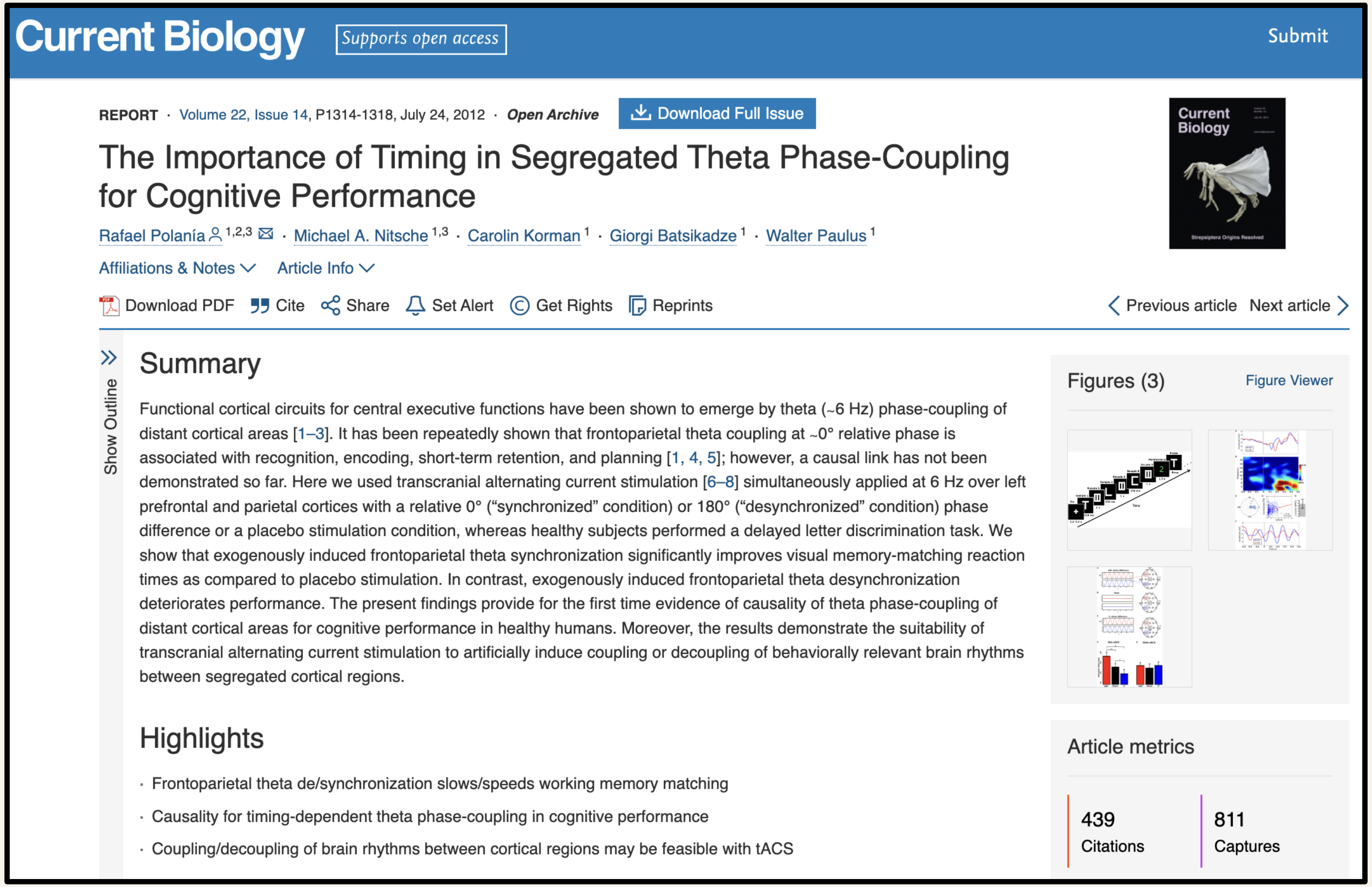
TEXT GENERATION

AUDIO GENERATION

IMAGE & VIDEO GENERATION

AI for scientific research project:

1. Literature review
2. Summarizing info.
3. Data collection
4. Data analysis
5. …



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REPORT · Volume 22, Issue 14, P1314-1318, July 24, 2012 · Open Archive | Download Full Issue

The Importance of Timing in Segregated Theta Phase-Coupling for Cognitive Performance

Rafael Polanía [1,2,3] · Michael A. Nitsche [1,3] · Carolin Korman [1] · Giorgi Batsikadze [1] · Walter Paulus [1]

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Summary

Functional cortical circuits for central executive functions have been shown to emerge by theta (~6 Hz) phase-coupling of distant cortical areas [1–3]. It has been repeatedly shown that frontoparietal theta coupling at ~0° relative phase is associated with recognition, encoding, short-term retention, and planning [1, 4, 5]; however, a causal link has not been demonstrated so far. Here we used transcranial alternating current stimulation [6–8] simultaneously applied at 6 Hz over left prefrontal and parietal cortices with a relative 0° ("synchronized" condition) or 180° ("desynchronized" condition) phase difference or a placebo stimulation condition, whereas healthy subjects performed a delayed letter discrimination task. We show that exogenously induced frontoparietal theta synchronization significantly improves visual memory-matching reaction times as compared to placebo stimulation. In contrast, exogenously induced frontoparietal theta desynchronization deteriorates performance. The present findings provide for the first time evidence of causality of theta phase-coupling of distant cortical areas for cognitive performance in healthy humans. Moreover, the results demonstrate the suitability of transcranial alternating current stimulation to artificially induce coupling or decoupling of behaviorally relevant brain rhythms between segregated cortical regions.

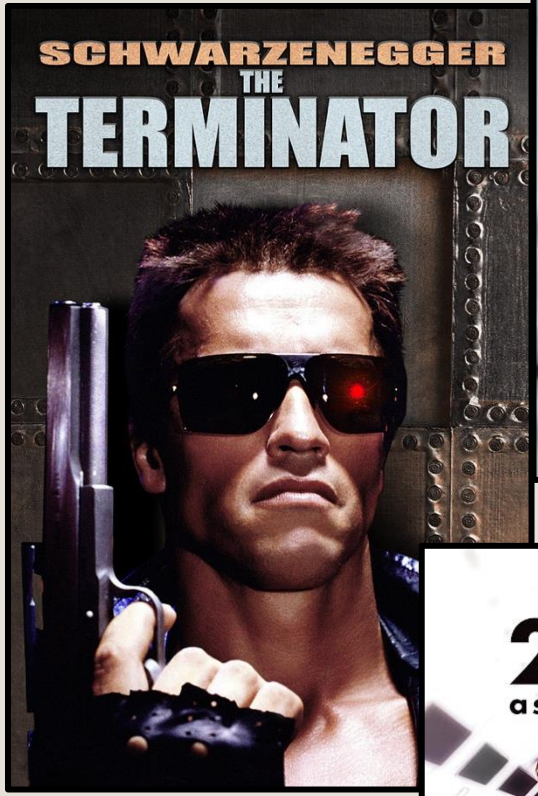
Highlights

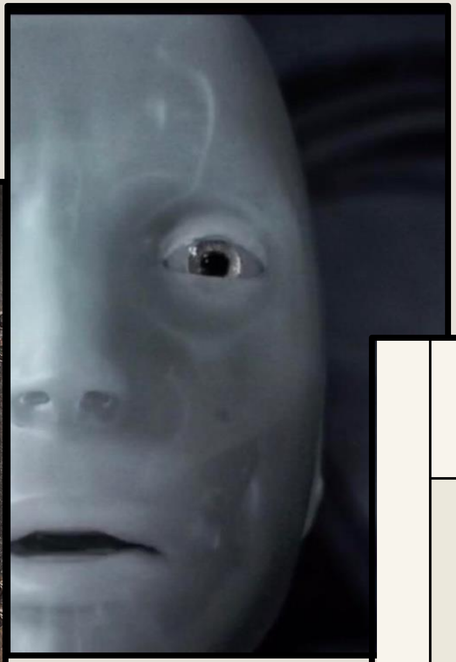
- Frontoparietal theta de/synchronization slows/speeds working memory matching
- Causality for timing-dependent theta phase-coupling in cognitive performance
- Coupling/decoupling of brain rhythms between cortical regions may be feasible with tACS

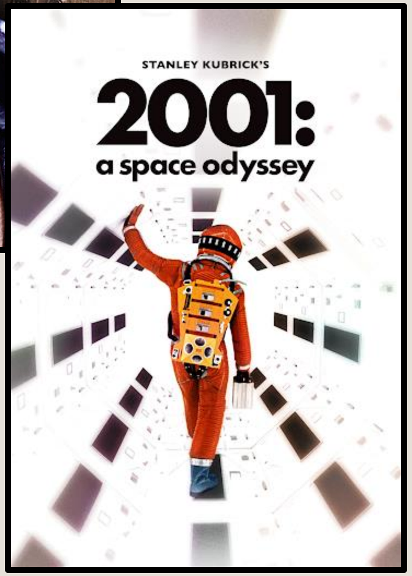
Figures (3) · Figure Viewer


THE
DIGITAL
SHADOWS

ETHICAL







FIELDS OF INTEREST	
WHAT CAN AI DO?	▪ **Section A**. AI curriculum I. Technical II. Practical **III. Ethical**
WHAT CAN AI NOT DO?	▪ **Section B**. The future curriculum Human abilities beyond intelligence

2

Section B

The Future Curriculum

- **Intuition** (expert knowledge) → Human knowledge, decision-making, and free will

  The somatic marker hypothesis, Antonio Damasio (1996)

- **Creativity** (artistic sensitivity) → Poetry & literature
- **Empathy** (social skills) → Moral dilemas

- Intuition
- Creativity
- Empathy

Top 10 skills of 2023

WORLD ECONOMIC FORUM

1. Analytical thinking	6. Technological literacy
2. Creative thinking	7. Dependability and attention to detail
3. Resilience, flexibility and agility	8. Empathy and active listening
4. Motivation and self-awareness	9. Leadership and social influence
5. Curiosity and lifelong learning	10. Quality control

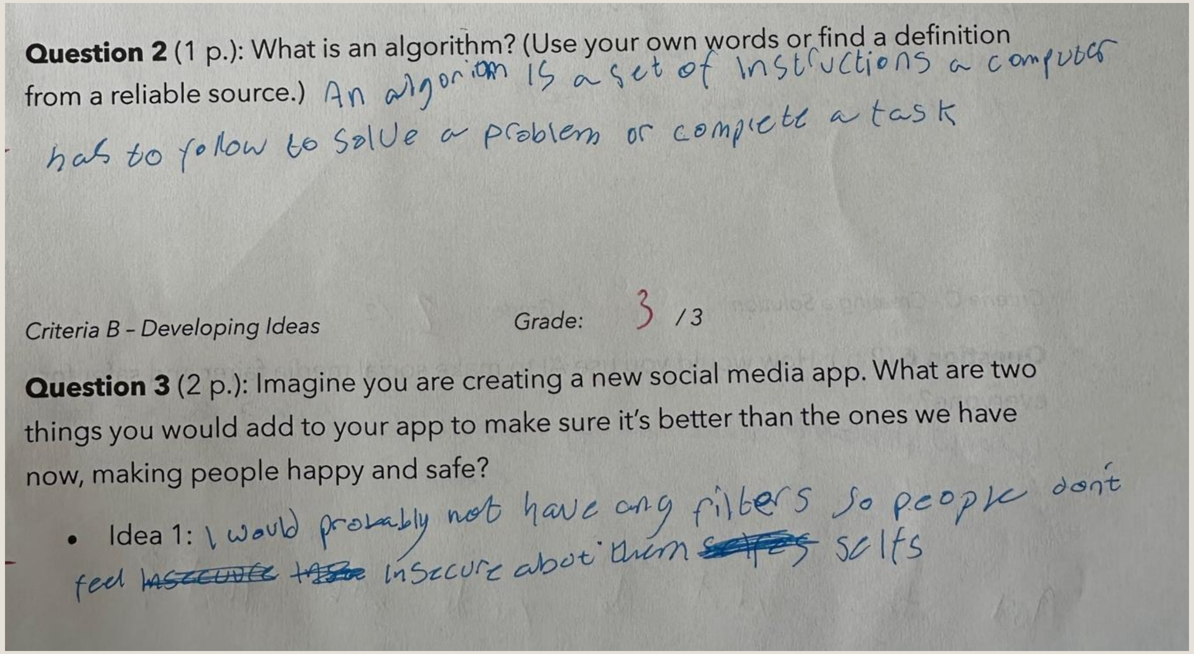
Type of skill

Cognitive skills · Self-efficacy · Management skills · Technology skills · Working with others

Source
World Economic Forum, Future of Jobs Report 2023.

Note
The skills judged to be of greatest importance to workers at the time of the survey

- **Intuition**
- Creativity
- Empathy

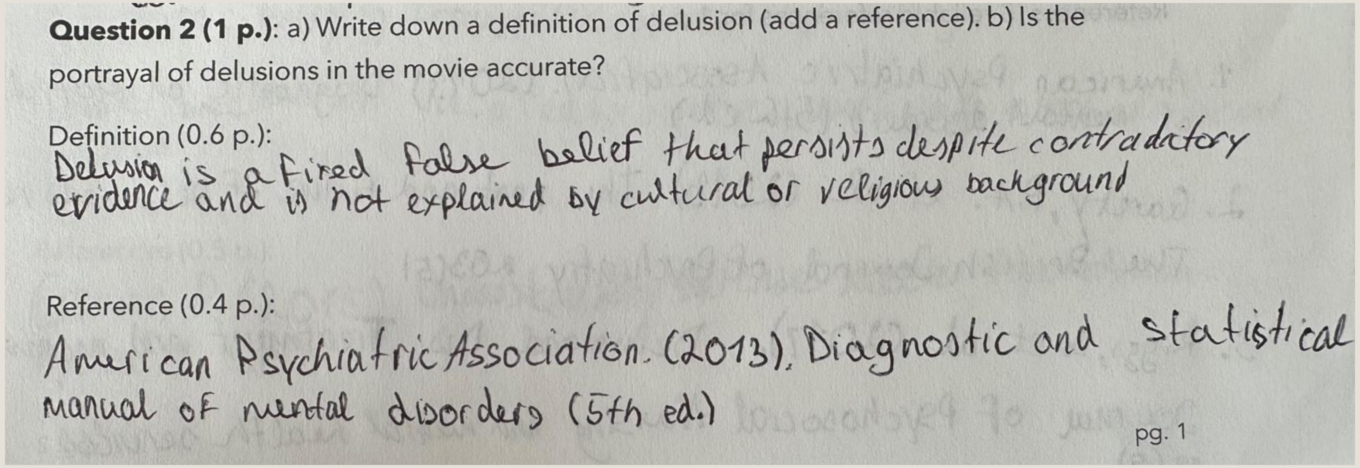


Question 2 (1 p.): What is an algorithm? (Use your own words or find a definition from a reliable source.) An algoriom is a set of instructions a computer has to follow to solve a problem or complete a task

Criteria B – Developing Ideas *Grade:* 3 */3*

Question 3 (2 p.): Imagine you are creating a new social media app. What are two things you would add to your app to make sure it's better than the ones we have now, making people happy and safe?

- Idea 1: I would probably not have any filters so people don't feel ~~insecure~~ ~~thse~~ insecure abot them ~~selfes~~ selfs



Question 2 (1 p.): a) Write down a definition of delusion (add a reference). b) Is the portrayal of delusions in the movie accurate?

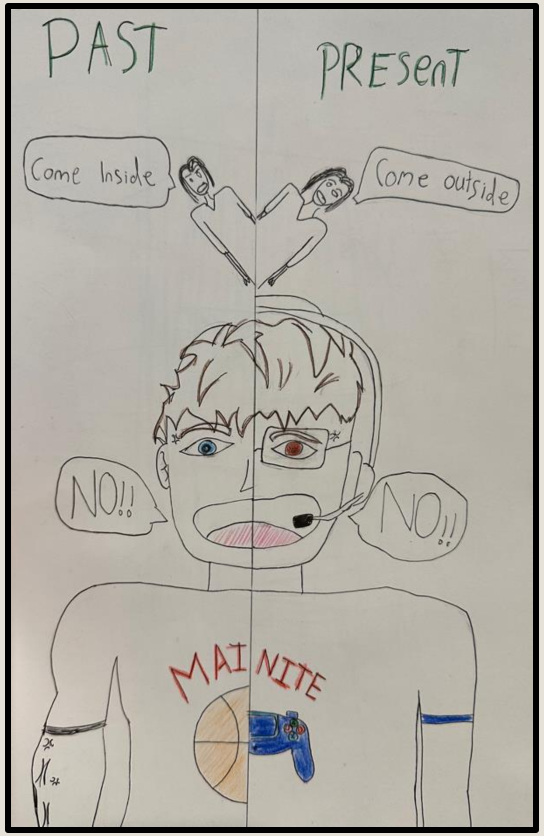
Definition (0.6 p.):
Delusion is a fixed false belief that persists despite contradictory evidence and is not explained by cultural or religious background

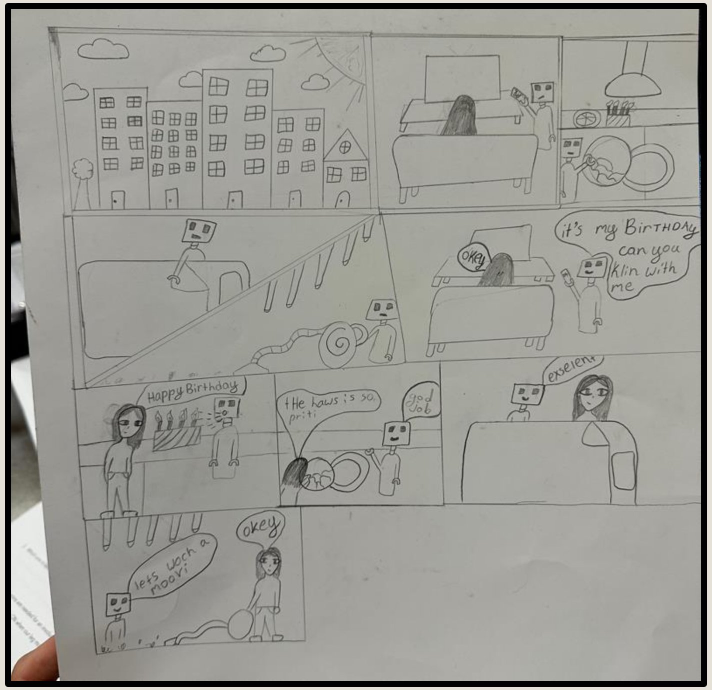
Reference (0.4 p.):
American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.)

pg. 1

- Intuition
- **Creativity**
- Empathy

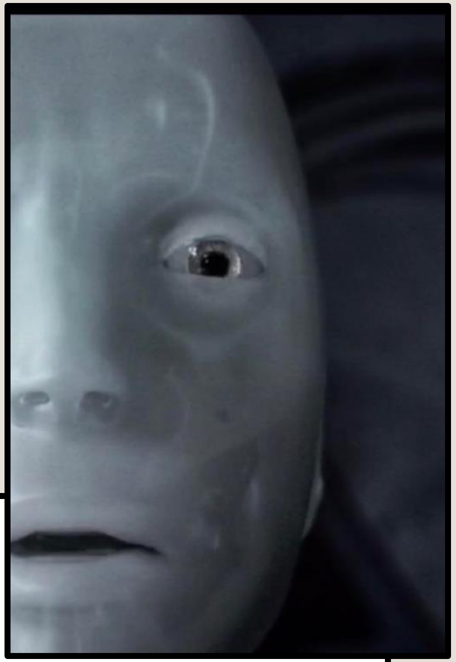
- **Encouraging creativity**
  - Mooncamp
  - AI movie
  - High altitude balloon
- **The literary contest** (23rd of April)

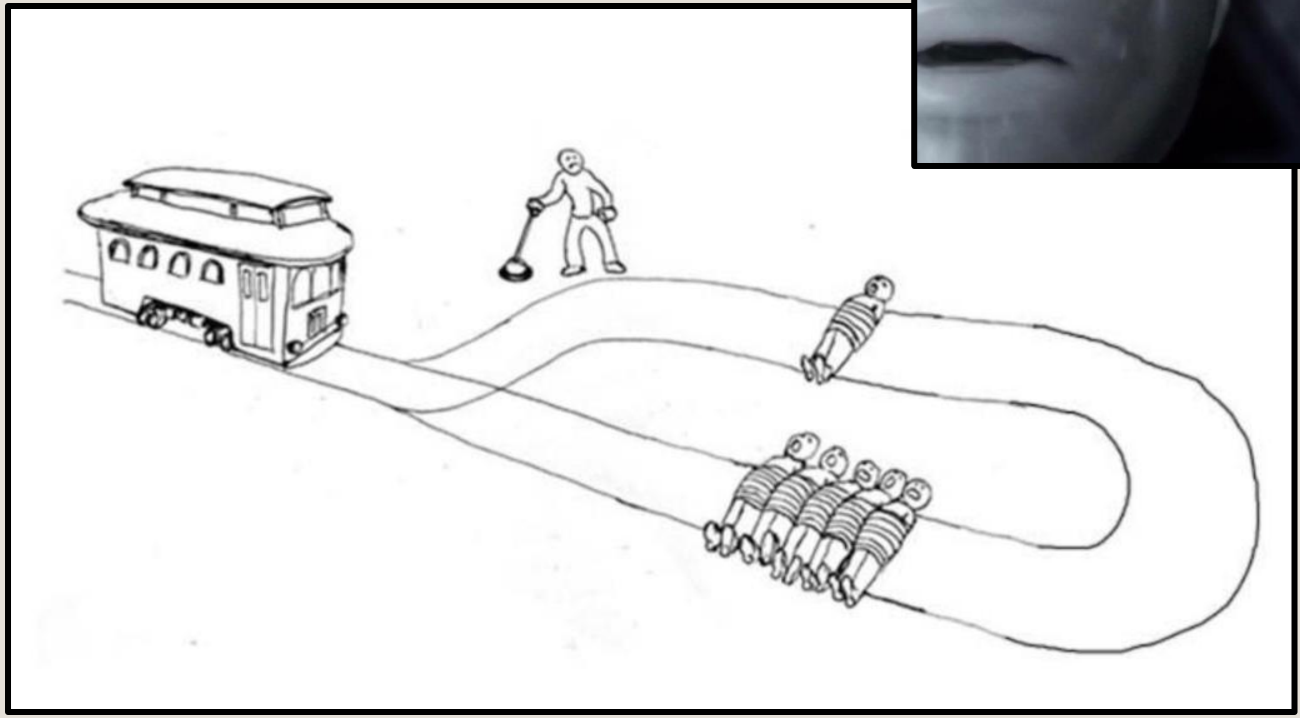


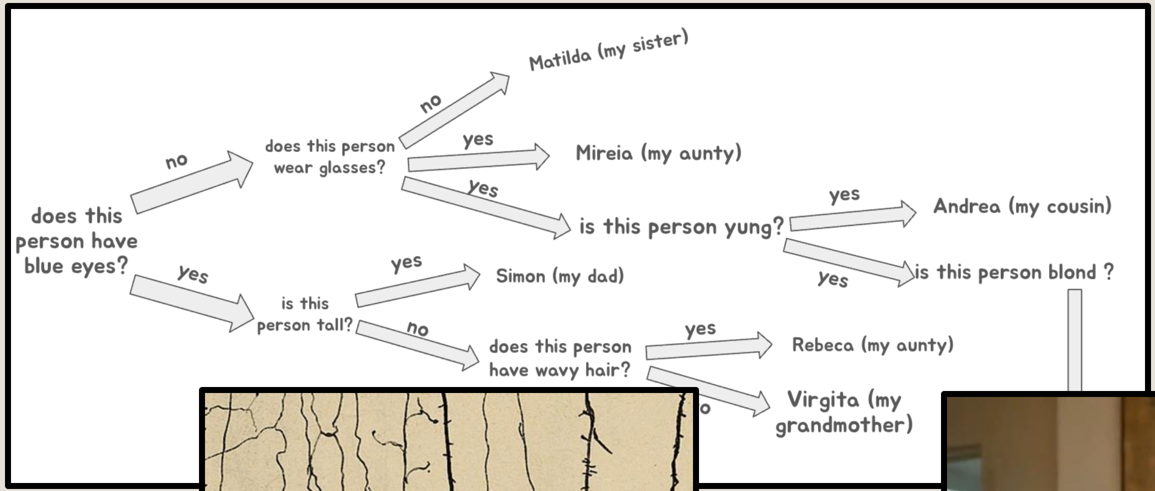


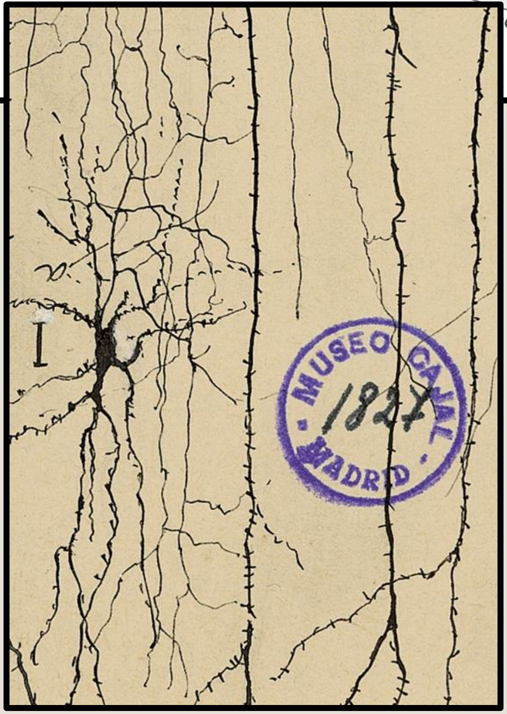
- Intuition
- Creativity
- **Empathy**

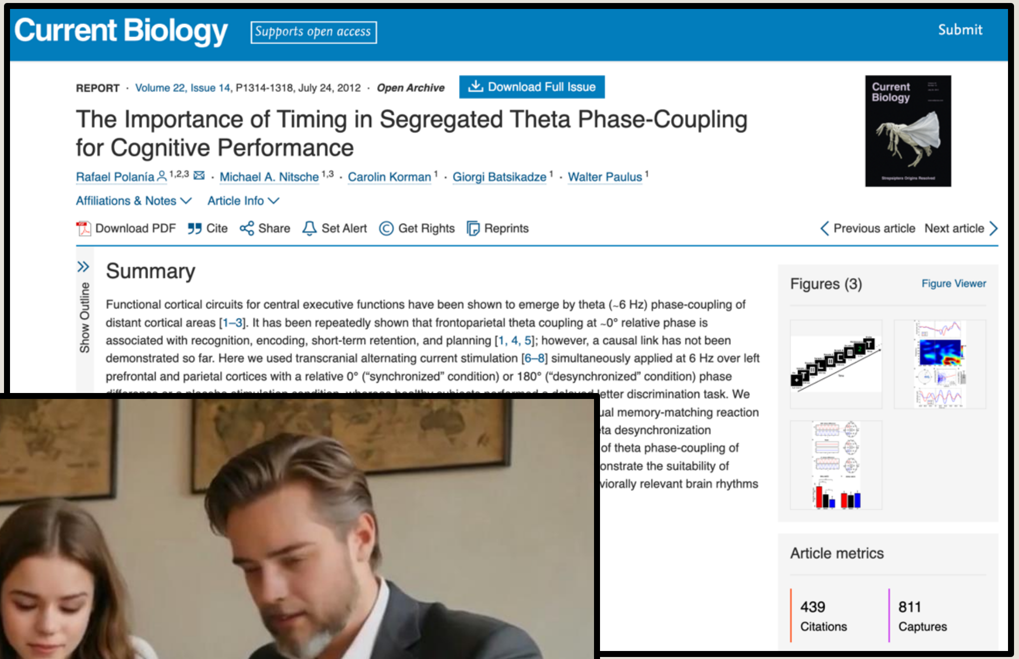
- Moral dilemmas (AI movie Y8)
- Psychological experiments (Y9)
- Other subjects: drama, literature…
- Well-being and external speakers







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Figures (3) · Figure Viewer

Article metrics

439 Citations

811 Captures

Thank you very much!

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