

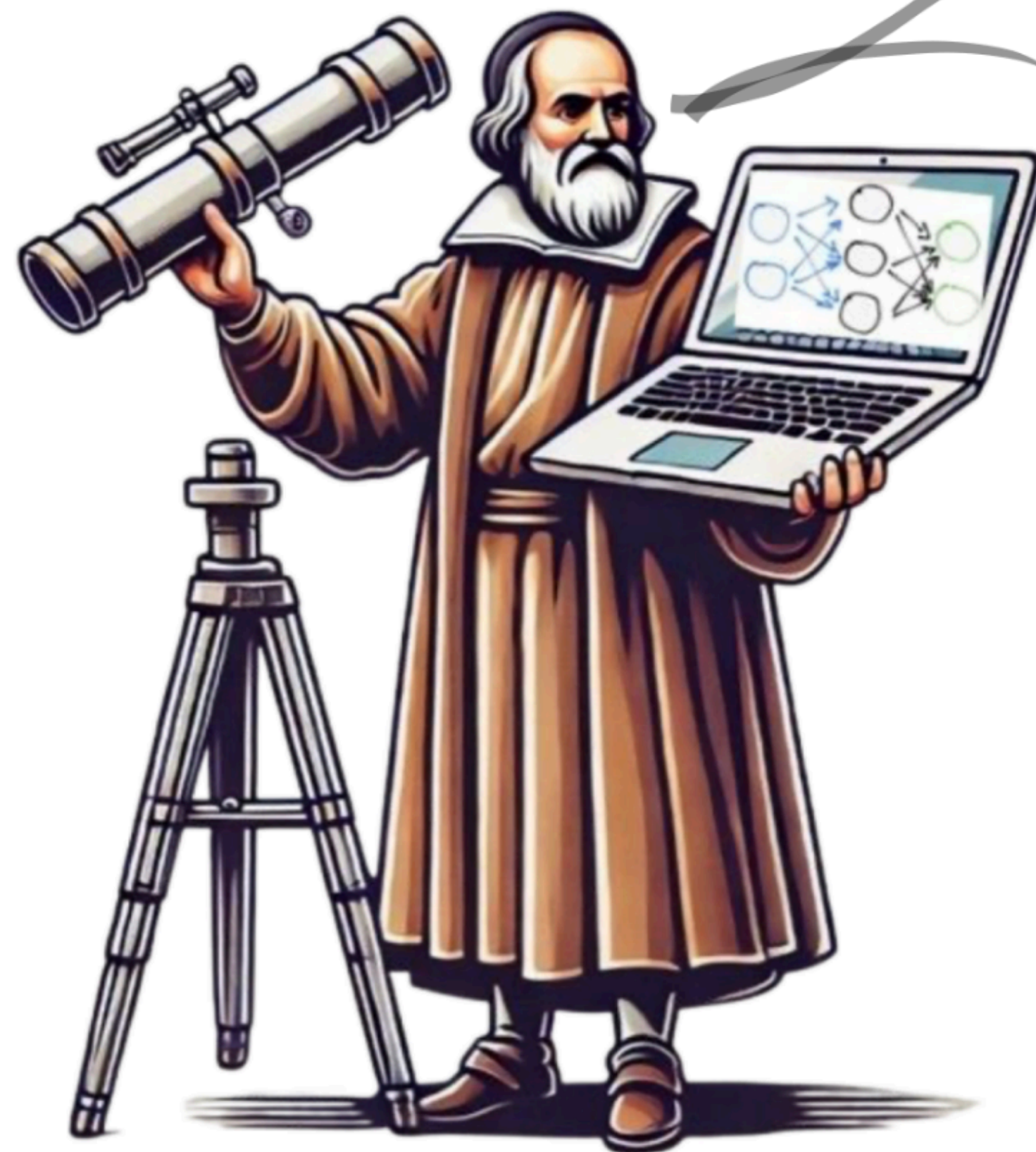
Florence's workshop on "Artificial Intelligence for Physical Sciences" (AI4Phys)

Organisers:

Francesco Belfiore, INAF
Alessandro Bombini, INFN
Lorenzo Buffoni, UniFi
Sandra Doria, CNR
Michele Ginolfi, UniFi

Special guest:

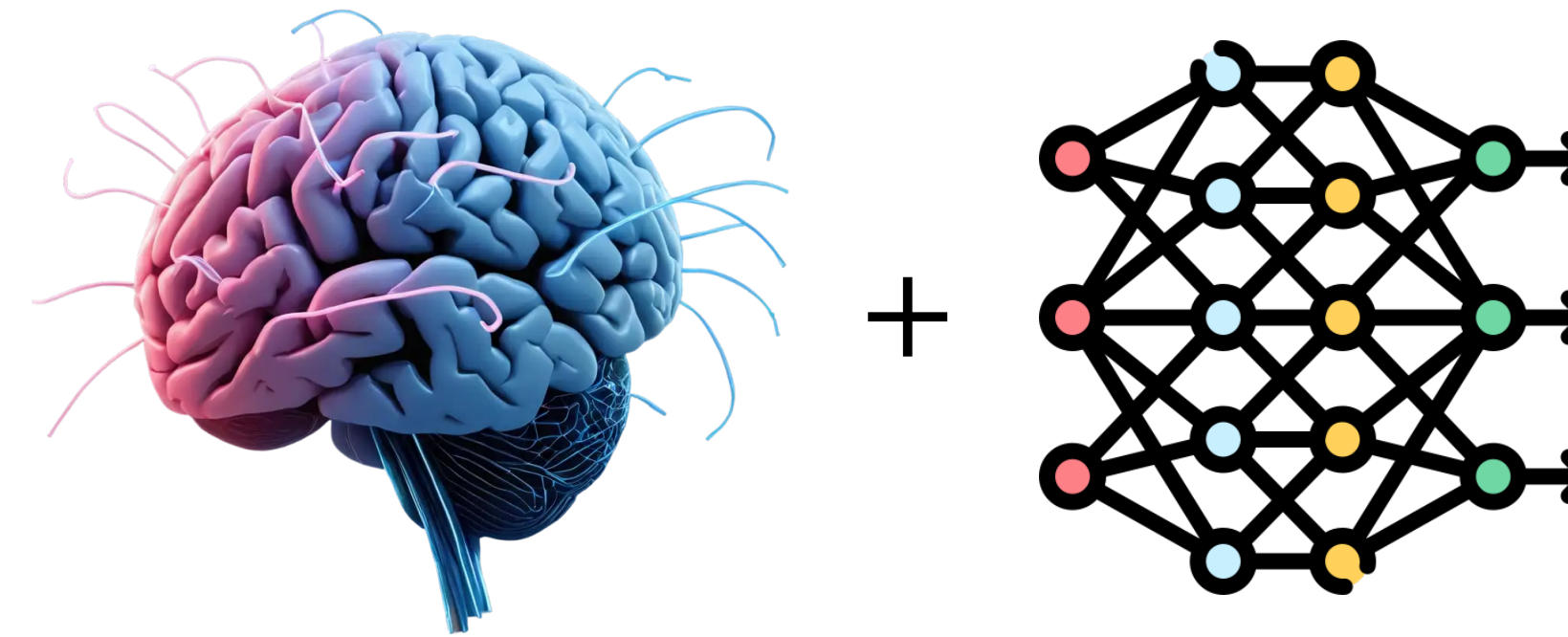
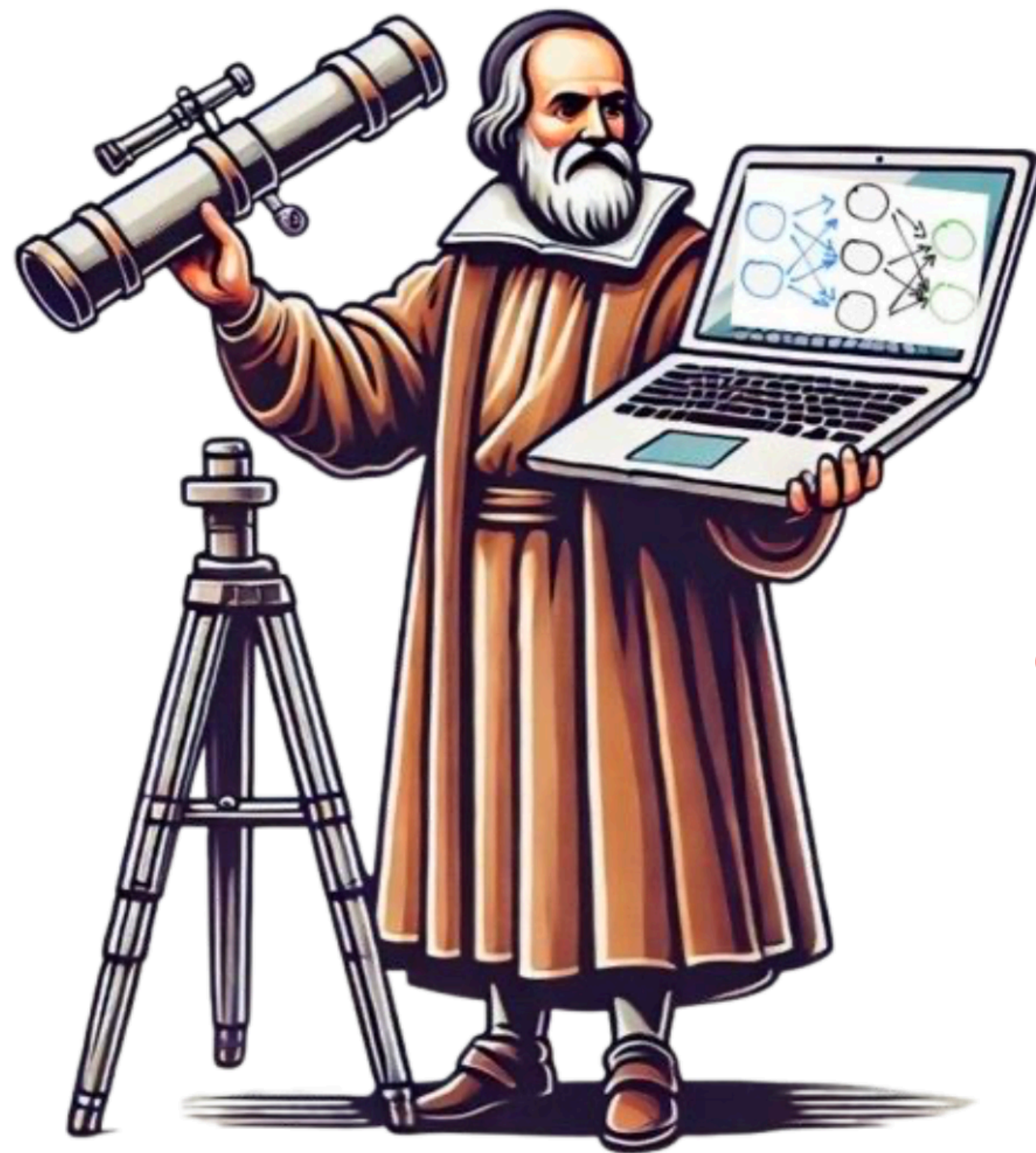
Galileo Galilei
training a neural net



Bellino questo
"Next To[h']en
Prediction", ora
ci faccio un GPT

[Galileo_1564:](#)
does Earth move?
[GalileoGPT:](#) Yes,
eppur si muove!

AI as an Accelerator of Scientific Discovery



Observation

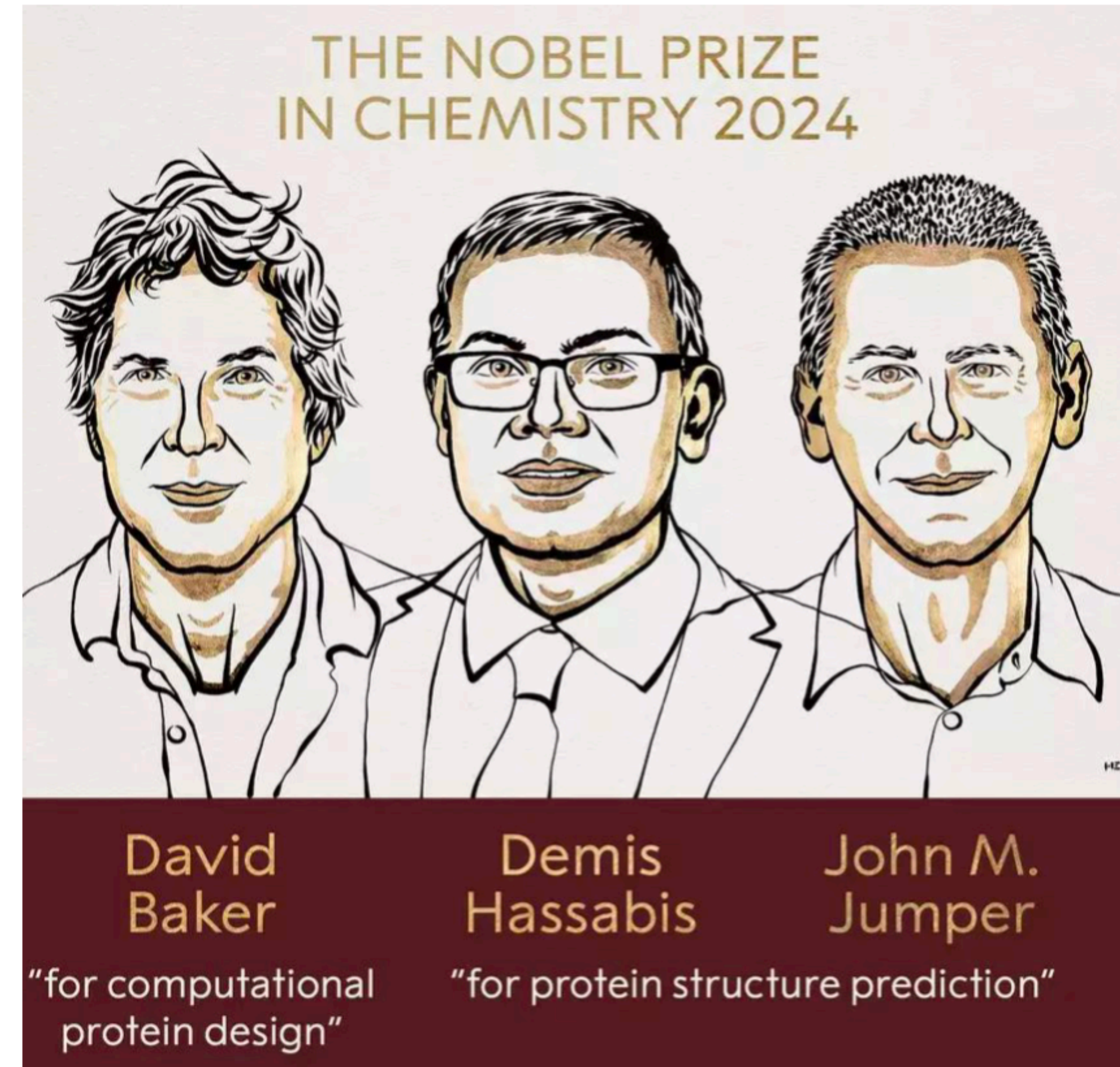
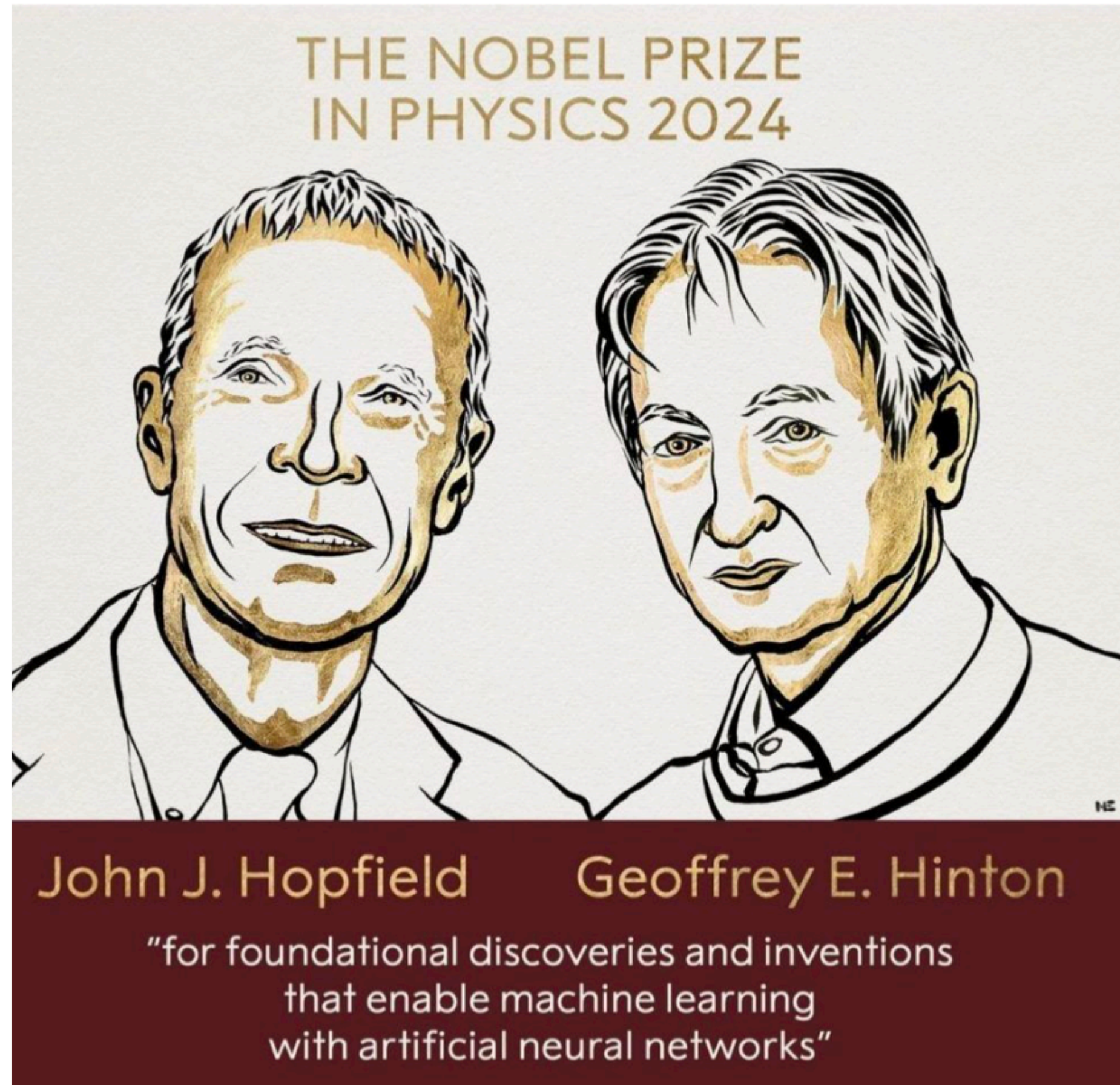
- Optimization and acceleration of *standard* processes
- Detection of hidden patterns and relationships in data, which can suggest new theories

Experiment

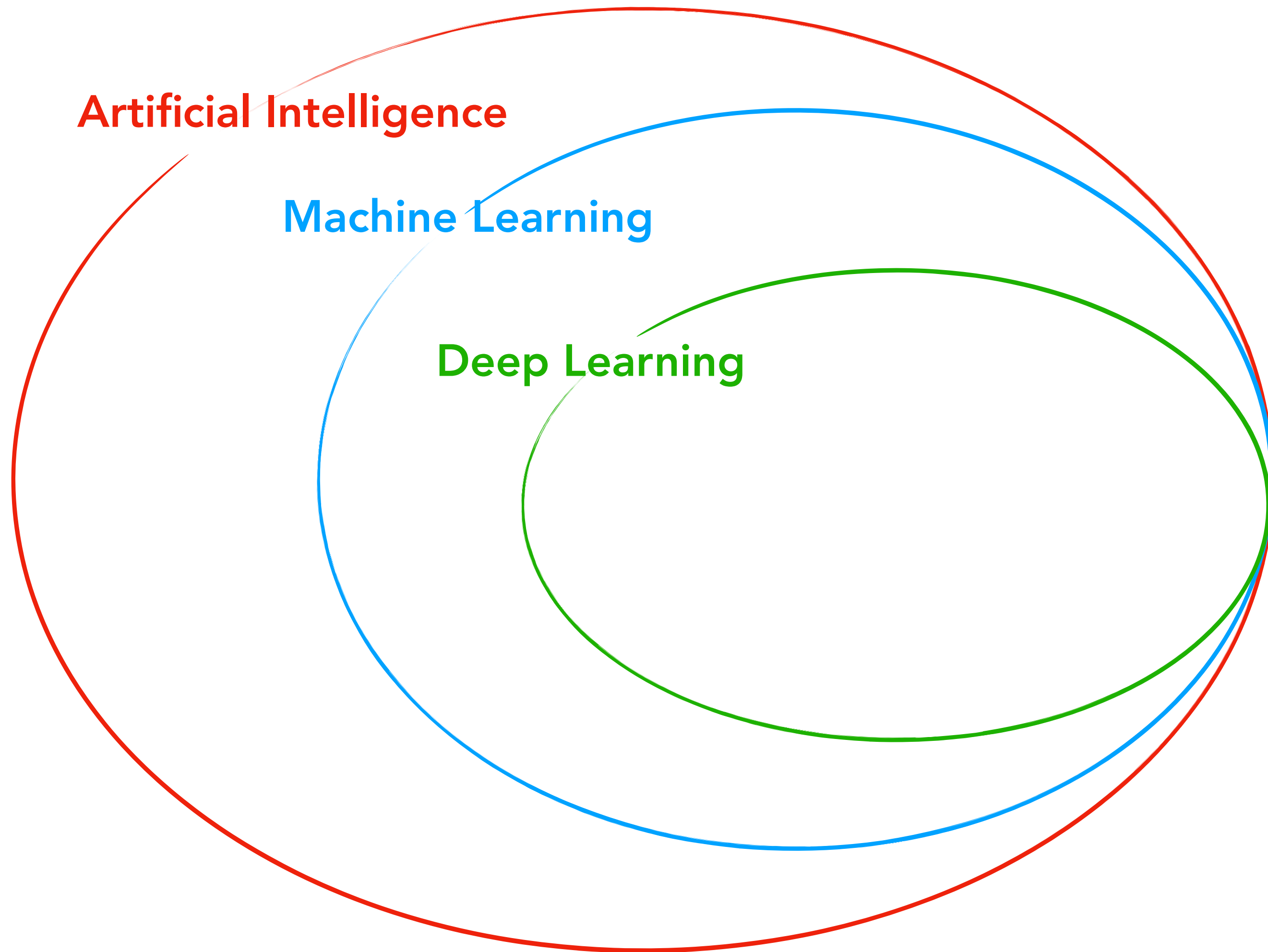
Hypothesis generation

We are living in an era where AI is transforming the way we conduct research, accelerating scientific discoveries. AI has already contributed to numerous breakthroughs, and its role in shaping the future of science will only continue to grow.

Timeliness

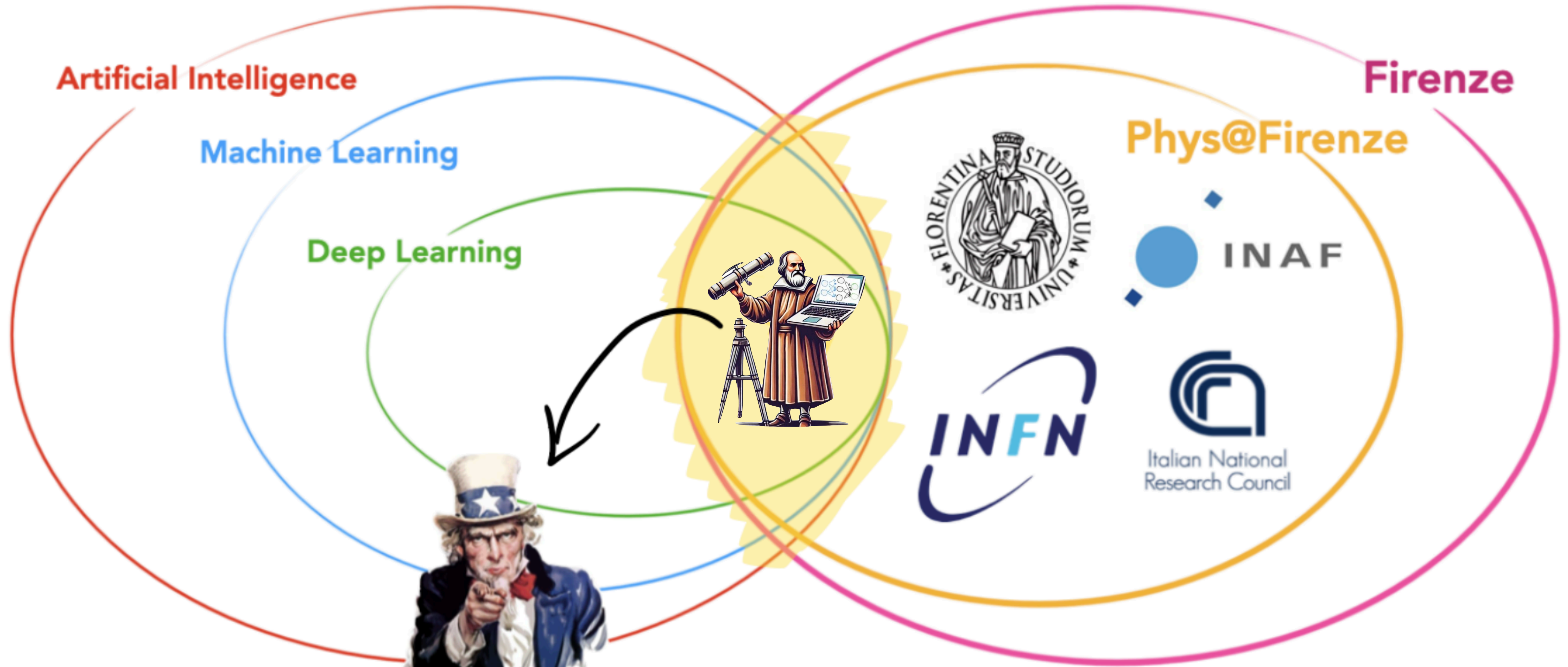


AI4Phys @ Florence



1st rule of any AI talk → put this graph :-) we can't avoid it, but let's add some circles

AI4Phys @ Florence



I WANT YOU
~~FOR U.S. ARMY~~ AI4PHYS
NEAREST RECRUITING STATION

Organisation of this workshop

Morning Session

- 9:40 — 11:00
 - “Machine Learning in Astrophysics”, F. Belfiore (INAF)
 - “Machine Learning in Complex Systems”, D. Fanelli (UNIFI)
 - “Quantum Machine Learning”, L. Banchi (UNIFI)
 - “AI applications in Medical Imaging”, S. Doria (CNR-ICCOM)
- 10:00 — 11:00
 - Coffee Break [THANKS DUCCIO!] & Discussion
- 12:00 — 13:20
 - “Machine Learning in Particle Physics”, B. Camaiani (INFN)
 - “AI applications in Biophysics and Neuroscience”, S. OLMI (CNR-ISC)
 - “AI applications in Optics”, M. Gurioli (UNIFI)
 - “Computing infrastructures for AI”, L. Anderlini (INFN)
- 13:20 — 14:20
 - Lunch

Afternoon Session

- ▶ Building a Science team
- ▶ Engaging w. Internal & External Stakeholders
- ▶ Teacing and Professional Development
- ▶ Open Discussion

Thank you for being here!

And let's build AI4Phys @ Florence!

Don't be scared like
Woody



Be happy like Buzz
Lightyear