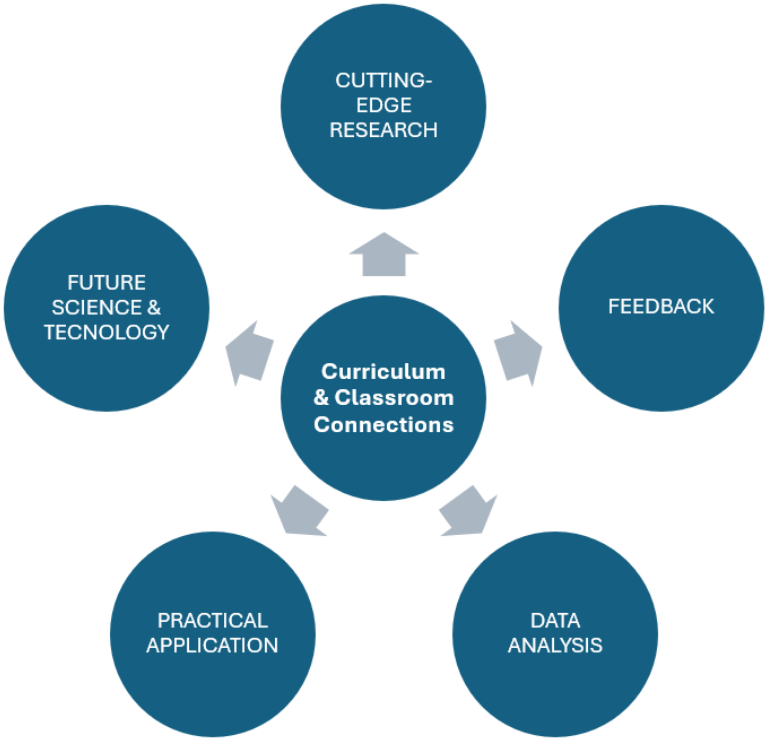
AI in Particle Physics

Curriculum & Classroom Connections



Key Ideas

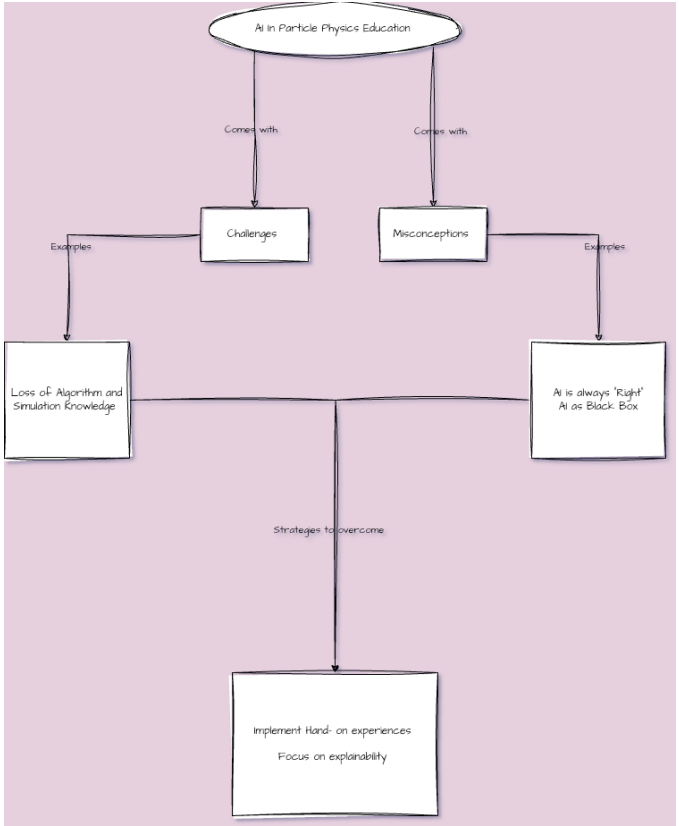
SIMULATION

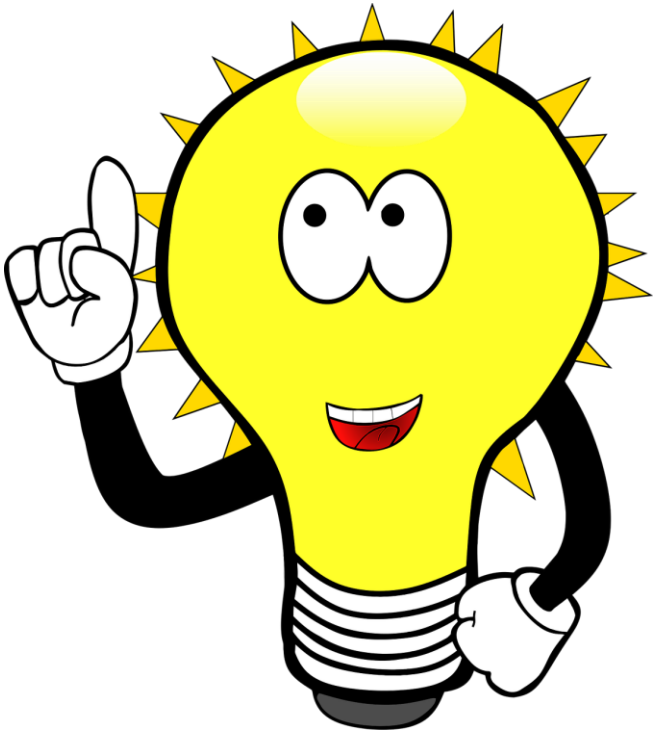
VISUALISATION

DATA ANALYSIS

INTERPRETATION

Potential Students' Conceptions & Challenges





Useful Material & Resources

Articles/Book

1- AI in Particle Physics (CERN):

Article explained about some AI applications in data analysis and experiment optimization at CERN

https://home.cern/news/news/computing/how-ai-transforming-particle-physics

2- Machine Learning in Particle Physics:

arXiv Paper on Machine Learning in Particle Physics

(https://arxiv.org/abs/1807.02876)

Tools:

1- TensorFlow: A powerful library for deep learning, widely used in particle physics.

TensorFlow

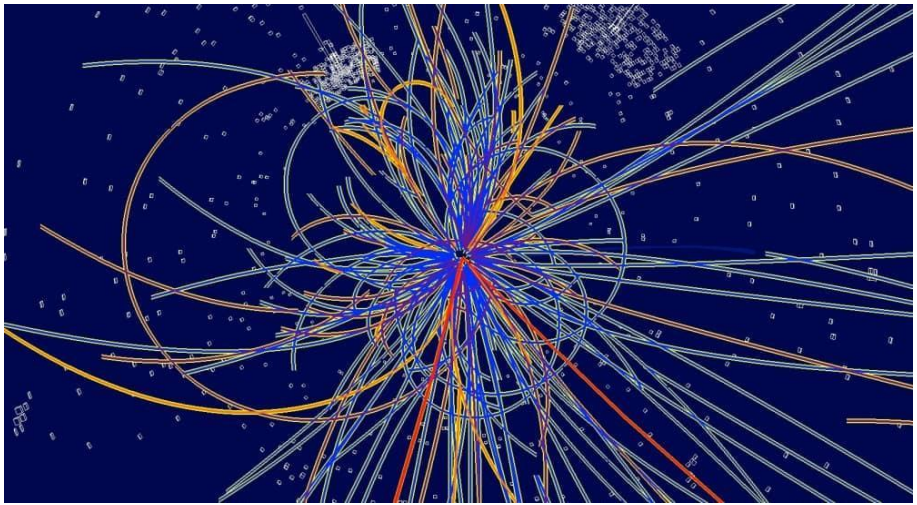
(https://www.tensorflow.org)

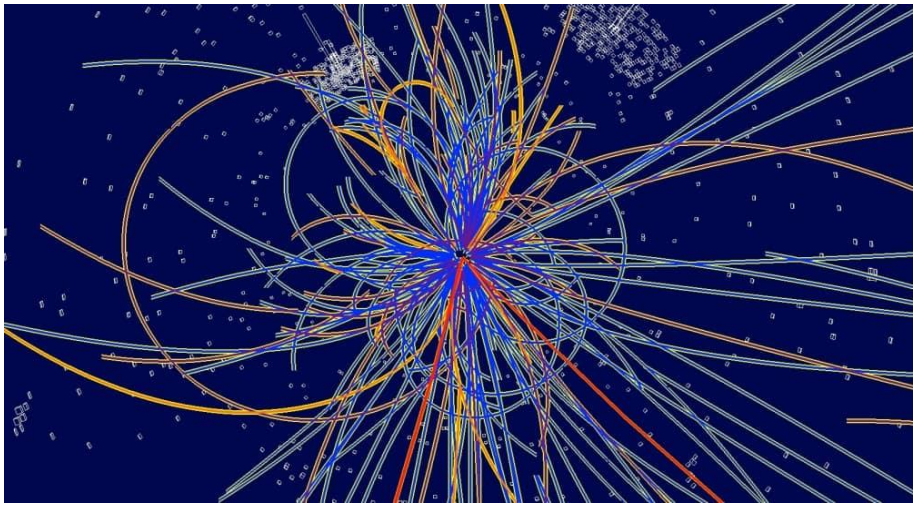
2- ROOT: A data analysis framework commonly used in high-energy physics.

ROOT Framework

(https://root.cern/)

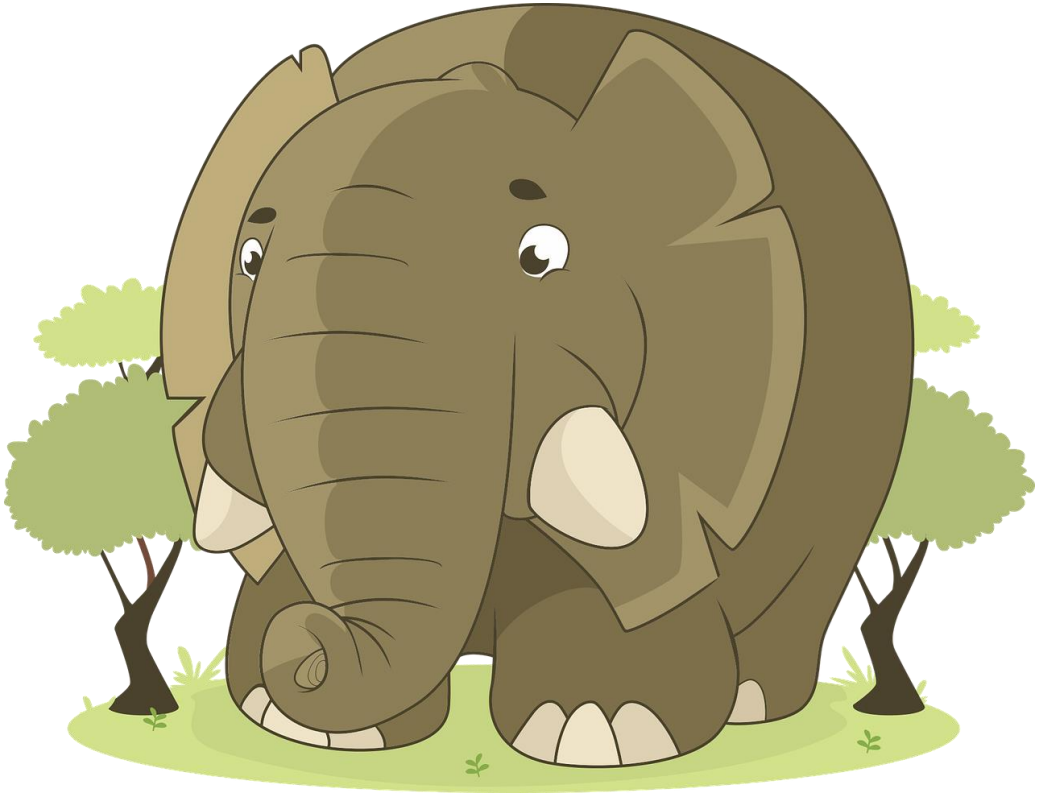
Best Practice Example





RIGHT

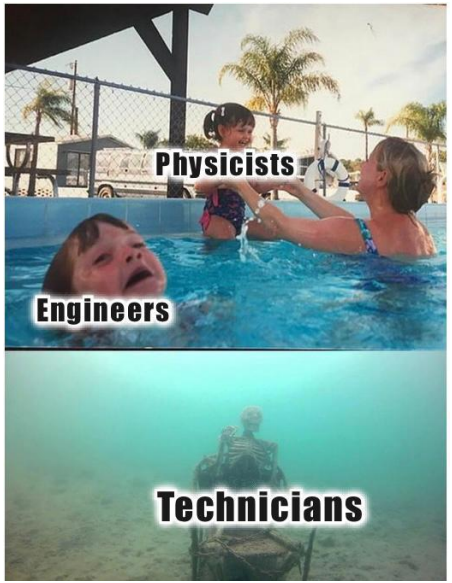
Best Practice Example



ITW2024 Study Group 6

Anna (Austria), Ahmed (Sri Lanka), Azeem (Pakistan), Irena(Lithuania)

One way in which our thinking has changed…



Highlights, snapshots, final words…