Explainable & Robust AI
[HORIZON-CL4-2024-HUMAN-03-02]

Dr Vivek V. DHAM
Advisor, Research & Innovation
EU Delegation to India

Call & deadlines

- TOPIC ID: HORIZON-CL4-2024-HUMAN-03-02
- Type Action : Research and Innovation Actions (RIA)
- Deadline model: Single-stage
- Opening date : 23 April 2024
- Deadline dates : 18 September 2024 (17h00 CET)
- Budget: EUR 15.00 million (EUR 7.50 million per project)

Expected Outcome

Enhanced AI System Capabilities

- Improved robustness and performance
- Increased reliability, including for generative AI models
- Awareness of operational robustness limits

Improved AI System Transparency

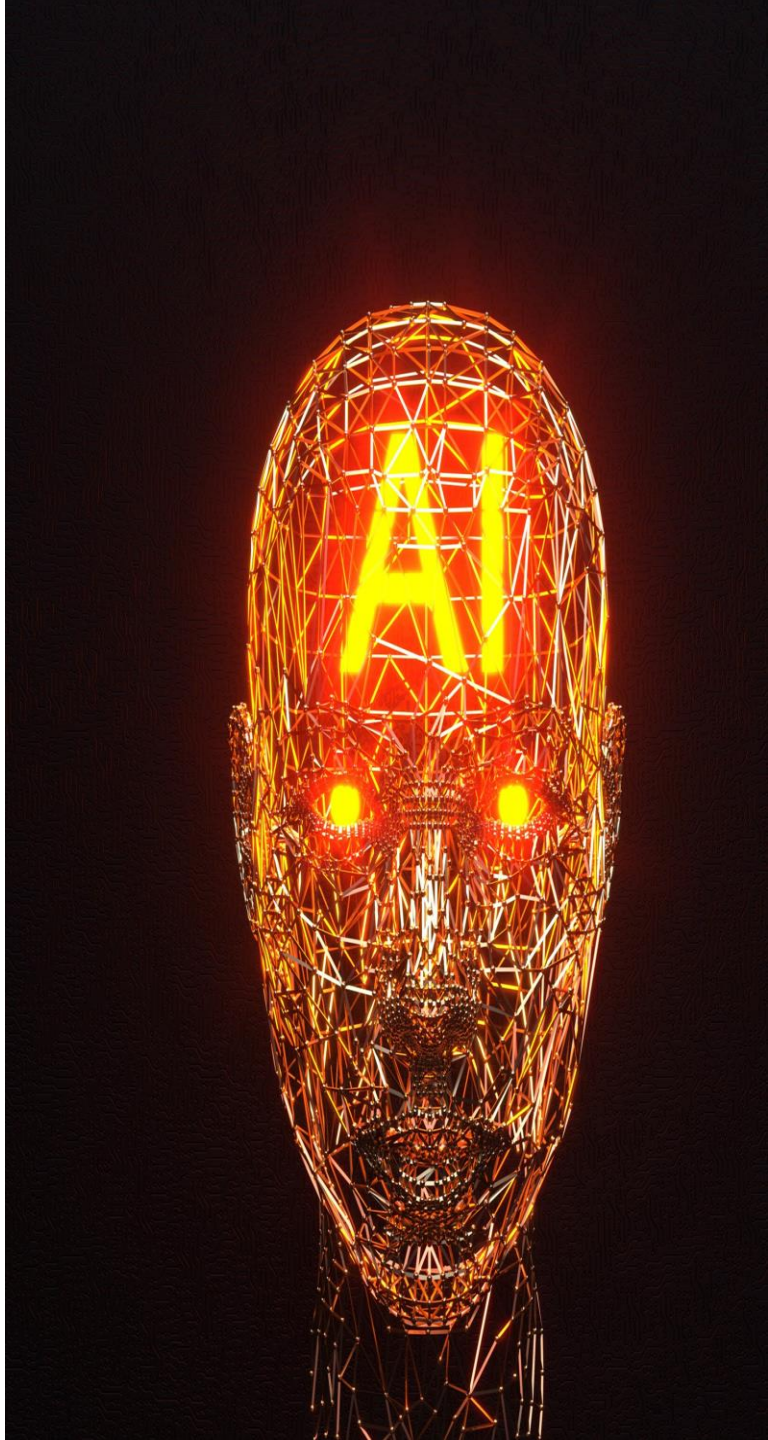
- Enhanced explainability and accountability
- Greater transparency in AI operations
- Better understanding of AI system autonomy
- Awareness of working conditions of the system

Scope

- Robust, safe, and reliable AI solutions
- Operates effectively in real-world conditions
- Provides meaningful and complete explanations
- Ensures fairness and aligns with European AI regulations

Objectives

- Develop novel methods for non-ideal circumstances
- Ensure transparency and meaningful explanations
- Predict operational limits
- Advance AI algorithms for reliability
- Maintain acceptable accuracy and efficiency
- Focus on foundational AI and machine learning research

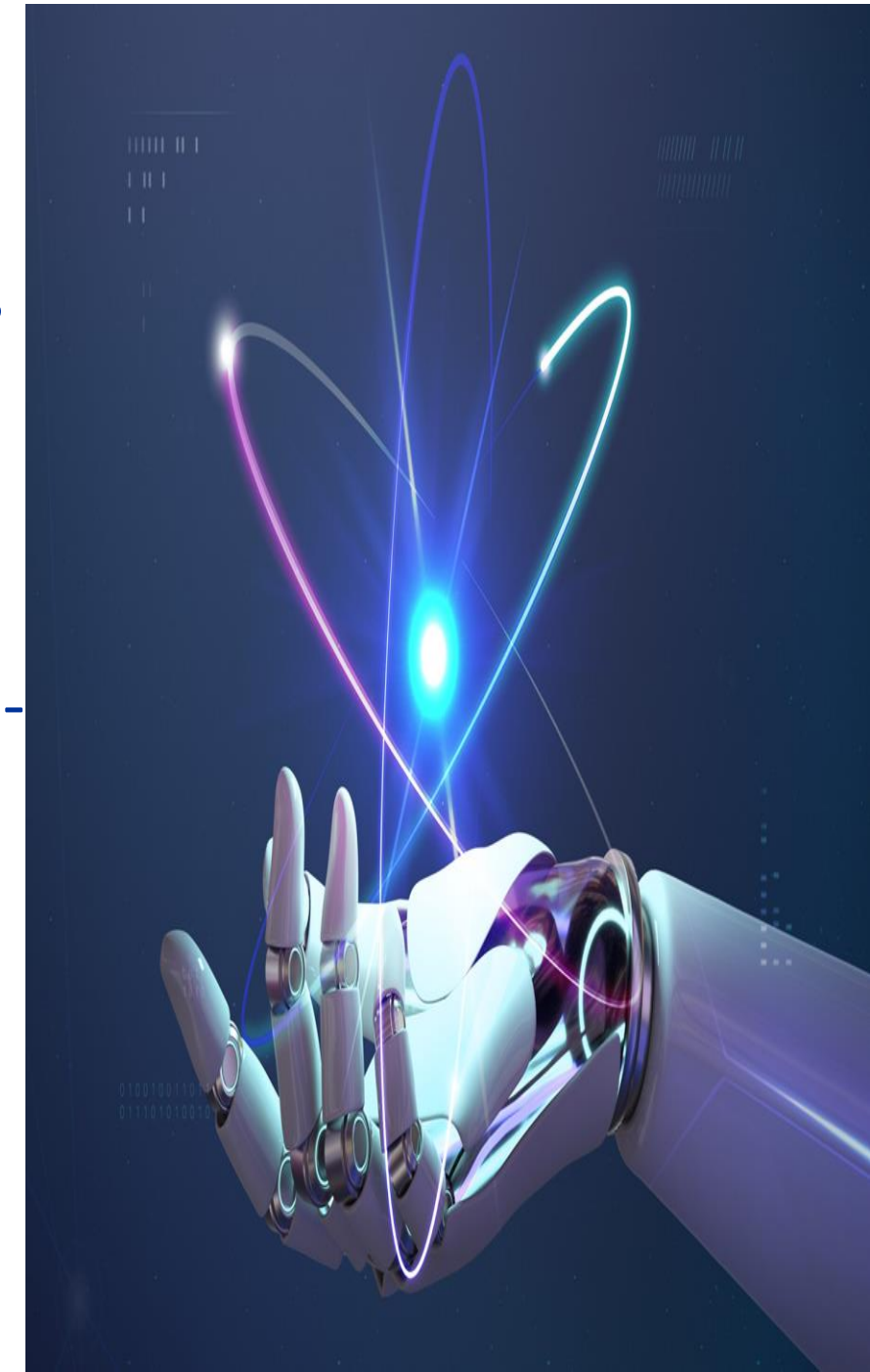


Methods

- Data-efficient learning, transformers, reinforcement learning
- Federated and edge learning, automated machine learning
- Hybrid approaches integrating learning, knowledge, and reasoning
- Neuromorphic computing, nature-inspired approaches
- Continual, active, and long-term learning
- Multi-modal learning and NLP for increased robustness

Multidisciplinary Research

- Involvement of relevant sector experts & disciplines
- Inclusion of Social Sciences and Humanities (SSH)
- Addressing gender, racial, and other biases
- Collaboration with HORIZON-CL4-2023-HUMAN-01-04 open innovation challenge



Ethical Principles

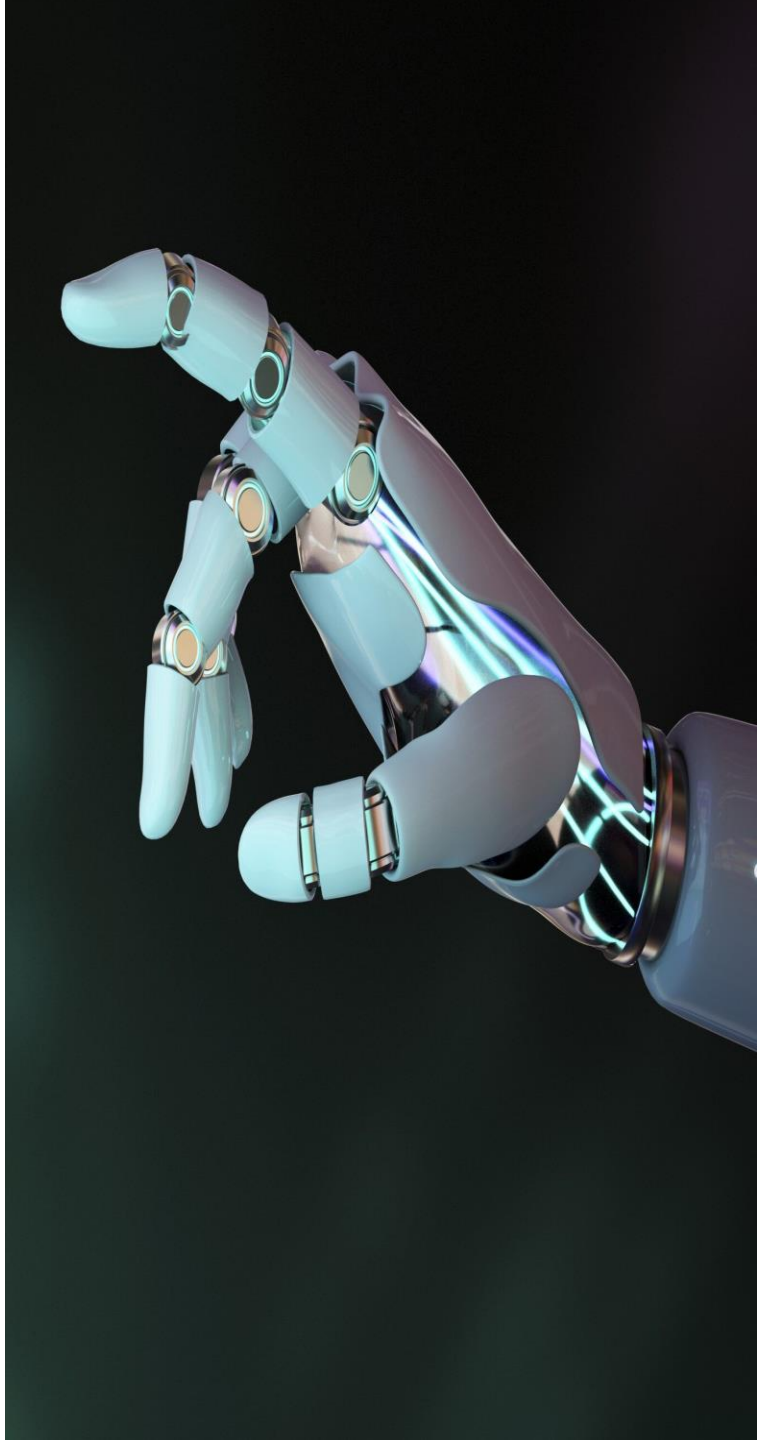
- Adherence to ethical principles from early stages
- Respect for fundamental rights
- Focus on robustness, safety, and reliability
- Alignment with the European Approach to AI

International Cooperation

- Encouragement of international cooperation
- Special focus on collaboration with Canada and **India**

Specific Topic Conditions

- Project start at TRL 2-3
- Target to achieve TRL 4-5 by project completion



Technology Readiness Levels

TRL 0: Idea - Unproven concept, n testing has been performed.

TRL 1: Basic research - Basic principles observed.

TRL 2: Technology formation - Technology concept formulated.

TRL 3: Applied Research - Experimental proof of concept.

TRL 4: Small scale prototype-Technology validated in a lab.

TRL 5: Large scale prototype -Technology validated in a relevant environment (industrially relevant environment in the case of key enabling technologies).

TRL 6: Prototype system - Technology demonstrated in a relevant environment (industrially relevant environment in the case of key enabling technologies).

TRL 7: Demonstration system -System prototype demonstration in an operational environment.

TRL 8: First of kind commercial system - System complete and qualified.

TRL 9: Full commercial application - Actual system proven in an operational environment (competitive manufacturing in the case of key enabling technologies, or in space).

Conclusion

- Emphasis on advancing AI for robustness and explainability
- Alignment with European AI principles
- International collaboration opportunities - India
- Importance of adhering to topic conditions