



Projects Seminar 2024

Presentation of CHIST-ERA

April 16, Helsinki

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- ❑ A network (ERA-NET) of research funding organisations in Europe and beyond
 - ✓ Covering most European countries + Québec, Taiwan & Brazil
 - ✓ Call consortium is a sub-set of CHIST-ERA consortium (participation on a topic by topic basis)
- ❑ Supporting long term research targeting emerging digital technologies
 - ✓ Investing in the identification and definition of promising topics
 - ✓ Supporting 2 topics per year
 - Typically 10-15 projects of approx. 0.8 - 1 M€ each, involving at least 3 countries each
 - ✓ Promoting Open Science, Widening Countries, Ethics
- ❑ Relying on a well-established yearly call cycle
 - ✓ One-step high quality evaluation process
- ❑ Fostering cross-fertilisation across topics and strategic thinking through a yearly Funded Projects Seminar
- ❑ Diversification of funding activities:
 - ✓ Call Open Science: 9 projects have been funded in 2023
 - ✓ Call on Science in Your Own Language: end of 2024 or early 2025

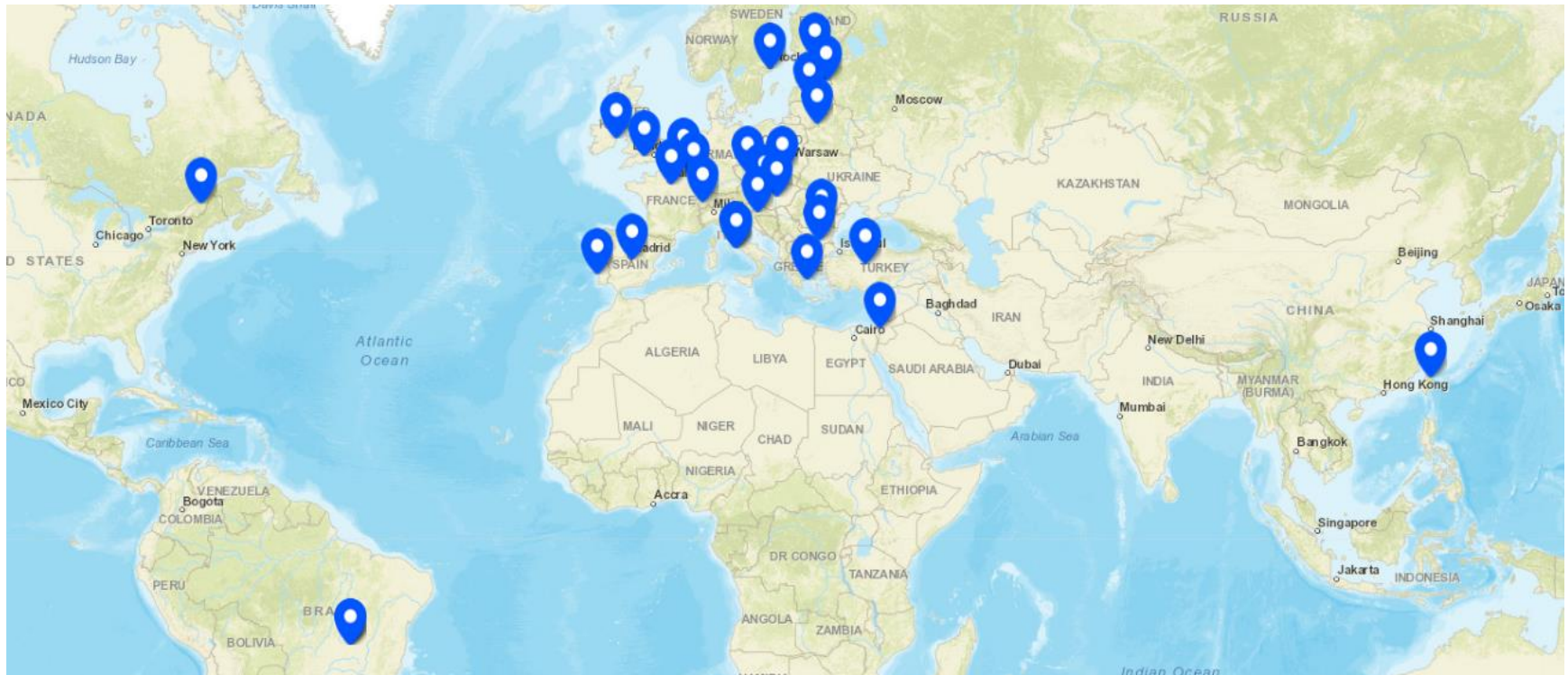
Network of Research Funders

CHIST-ERA 2024

32 funders from 28 countries

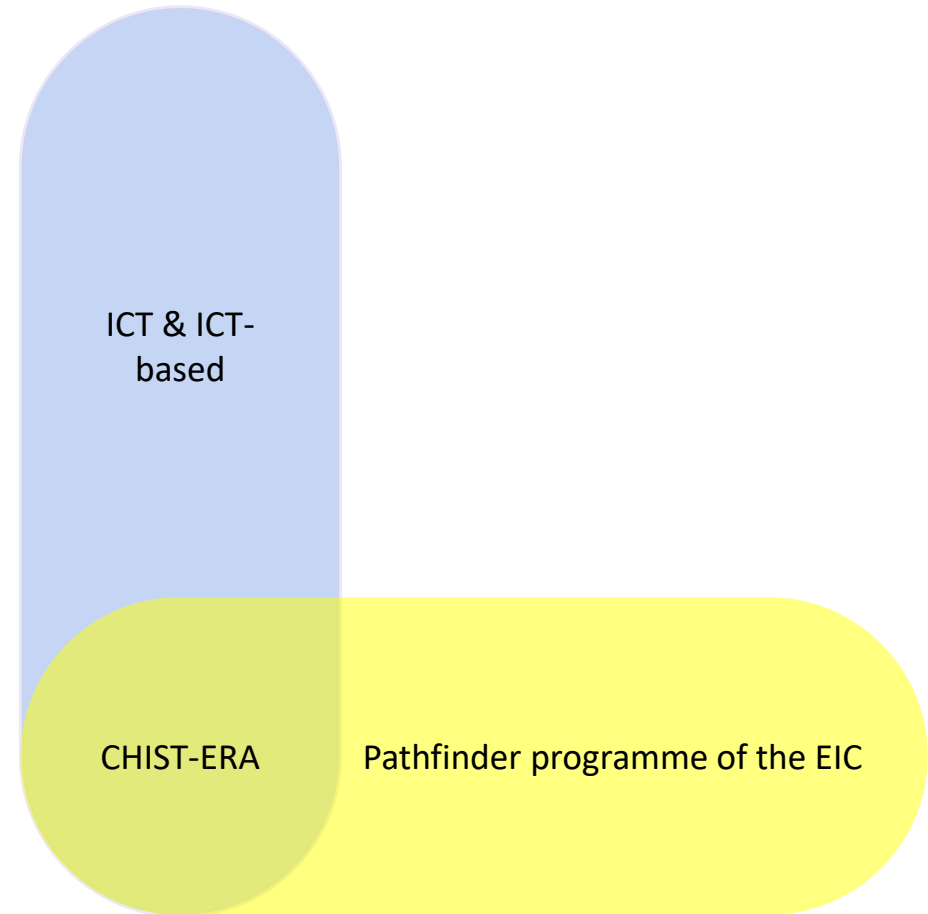
CHIST-ERA 2010

9 funders - 9 countries





- ❑ CHIST-ERA is the ERA-NET of the EIC Pathfinder programme
- ❑ Support to **basic research for future and emerging ICT** (Pathfinder-like research)
 - ✓ Long term interdisciplinary research
 - ✓ Risky with potential high impact
 - ✓ Favour novelty
- ❑ Focus on performance evaluation





- ❑ With the past 13 calls, CHIST-ERA has targeted:

Quantum computing, consciousness, knowledge extraction, low-power computing, intelligent user interfaces, smart communication networks, adaptive machines, distributed computing, trustworthy cyber-physical systems, human language understanding, security and privacy in the IoT, terahertz communication, lifelong learning for intelligent systems, visual analytics, object recognition and manipulation by robots, big data for smart industry, analogue computing for AI and smart computing in networks, explainable AI, ICT for environmental sustainability, brain computer interfaces and sustainable ICT, NOEMS for ICT and misbehaviour detection in online social networks, security and privacy in decentralised and distributed systems, machine learning-based communication systems, towards wireless AI

→ More info: <https://www.chistera.eu/funded-topics>



Yearly Main Events

- ❑ Call topics selection workshop (among funding organisations & scientific advisory board)
 - ✓ Elaborate topic selection process open to new ideas
 - ✓ Selection based on well-defined criteria and thorough discussion
- ❑ Call topics definition conference (for all researchers interested in a selected topic)
 - ✓ Advertises the call
 - ✓ Contributes to call scoping
 - ✓ Networking event for the applicants
- ❑ Funded Projects Seminar (for all representatives of active projects)
 - ✓ Contributes to project follow-up
 - ✓ Networking event for projects within and across topics
 - ✓ Fosters strategic thinking



Involvement of Widening Countries

- ❑ Motivation: Spread excellence
 - ✓ CHIST-ERA, as a funding instrument of collaborative projects following competition, can be instrumental
 - In opening well established non-Widening Countries research networks to most talented researchers in the Widening Countries
 - Conversely, enrich the European scientific and technology landscape with varied perspectives and scientific and technology challenges to tackle

- ❑ Supporting measures
 - ✓ Selection criterion to prioritise projects with Widening Countries in case of ex aequo projects
 - ✓ Disseminate call opportunities via dedicated communication (infodays, matchmaking event...)
 - ✓ Partner Search Tool
 - ✓ Grant an additional funding when the coordinator is in the Widening Countries

- ❑ More info: <https://www.chistera.eu/widening-countries-policy>

Augmented project factsheet on CHIST-ERA website

- ✓ Main results, key exploitable results, publications in open access
- ✓ Via project coordinator account and Toolbox

- Slovak Academy of Sciences - Slovakia
- Mat-obaly.s.r.o. - Slovakia

Main results

The SOON project investigates the impact of the use of autonomous social agents to optimize an industrial process. Currently, in Industry 4.0, smart entities do exist. However, intelligence is localised and the same shop-floor. Our motivation comes from the observation that, if we want to create and people, all these entities have to be connected and follow a shared, easy to understand. In this project, we propose a holistic multi-agent paradigm that encompasses machines, teach to and to learn from software agents, via deep learning and data mining algorithm data produced by sensors (vibration, temperature, etc.), automation and information system), and humans in real-time.

The first year of the SOON project has been dedicated to the definition of the project scenarios partners in the project, we have identified the most relevant scenarios and use cases. In be addressed with the proposed solution. The most relevant scenarios focus on Predict defined and an ontology describing the different entities has been realized. In addition, Reinforcement Learning (RL) has been realized and its optimization and evaluation is on (see for instance the figure below) with different kinds of industrial machines. The RL all possible failures and the limitation of resources.

Key exploitable results

The overall objective of this project is to demonstrate the added value of using a social project is at a first stage, nevertheless we expect that the final results could have a large European industry. The main goal of the project is to propose smart solutions to reduce where big data and high complexity is involved.

Publications in Open Access

[DisCERN: Discovering Counterfactual Explanations using Relevance Features from Artificial Intelligence \(ICTAI\)](#)

Wiratunga, N., Wijekoon, A., Nkisi-Orji, I., Martin, K., Paliwardana, C., & Corsar, D.

[DisCERN: Discovering Counterfactual Explanations using Relevance Features from International Conference on Tools with Artificial Intelligence \(ICTAI\)](#)

Nirmalie Wiratunga AND Anjana Wijekoon AND Ikechukwu Nkisi-Orji AND Kyle Martin AND C

[A Systematic Review on Model-agnostic XAI Libraries \(ICCBR Workshops 2021\)](#)

Jesus M. Darias, Belén Díaz-Agudo, Juan A. Recio-García

[DisCERN: Discovering Counterfactual Explanations using Relevance Features from International Conference on Tools with Artificial Intelligence \(ICTAI\)](#)

Nirmalie Wiratunga RGU ; Anjana Wijekoon; Ikechukwu Nkisi-Orji; Kyle Martin; Chamath Paliha

[Counterfactual Explanations for Student Outcome Prediction with Moodle Footprint United Kingdom\)](#)

Anjana Wijekoon, Nirmalie Wiratunga, Ikechukwu Nkisi-Orji, Kyle Martin, Chamath Paliwardana

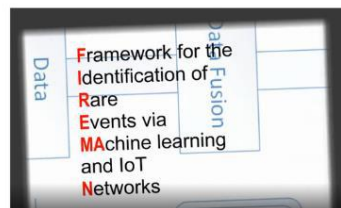
[Deliverables Milestone 0 \(restricted access\)](#)

Belen Díaz-Agudo; Nirmalie Wiratunga; Anne Liret; Derek Bridge;

[A Case-Based Approach for the Selection of Explanation Algorithms in Image Classification \(186-200\) Springer\)](#)

Juan A. Recio-García, Humberto Parejas-Llanovarcad, Mauricio Gabriel Orozco-del-Castillo, Est

Project videos



FIREMAN

Posted on Mon, 04/12/2021 - 11:07

Framework for the Identification of Rare Events via Machine learning and IoT Networks

[>>>FIREMAN Video<<<](#)

Project Summary: [FIREMAN](#)

Call topic: Big data and process modelling for smart industry (BDSI)



iSee

Posted on Mon, 04/12/2021 - 11:26

Intelligent Sharing of Explanation Experience by users for users

[>>>iSee Video<<<](#)

Project Summary: [iSee](#)

Call topic: Explainable Machine Learning-based Artificial Intelligence (XAI)



IVAN

Posted on Mon, 04/12/2021 - 11:21

Interactive and Visual Analysis of Networks

[>>>IVAN Video<<<](#)

Project Summary: [IVAN](#)

Call topic: Visual Analytics for Decision-Making under Uncertainty (VADMU)



Thank you!

