

Universidad
Complutense de Madrid



Robert Gordon
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British Telecom
France



University College
Cork



www.isee4xai.com

Intelligent Sharing of Explanation Experience by Users for Users
2021-2024

Spain: State Research Agency (AEI)



UK: Engineering and Physical Sciences Research Council (EPSRC)



France: French National Research Agency (ANR)



Ireland: Irish Research Council (IRC)



This project has received funding from the CHIST-ERA
CHIST-ERA-19-XAI-008





Belen Díaz Agudo, Juan A. Recio García, Luis Hernández Yáñez, Marta Caro Martinez, Jesus Darias

- Knowledge-based approaches in CBR, deep learning, transfer to platform development, ontology development
- Collaboration with the IAAA-MX research group in México that will provide use case 4 (Natural Event Detection) and Bosch Spain (use case 3)



Nirmalie Wiratunga, Anjana Wijekoon, David Corsar, Kyle Martin, Chamath Palihawadana, Ikechukwu Nkisi-Orji

- Intent mining, Conversational digital behavioural change interventions in healthcare systems (use case 2)
- Ontology conceptualization



Derek Bridge

- Designing explanation strategies for CBR and recommender systems
- Interface between the communities involved in iSee with researchers in Ireland's Insight Centre for Data Analytics



Anne Liret, Bruno Fleisch

- Open Innovation ecosystem to help businesses in complying with obligations of explaining AI decisions.
- Responsible use of AI from an ethical and regulatory perspective
- Research on use cases 1 and 5 (Active learning in Telecom network operations & security incident management).
- Cyber defence research

1st year meeting. February 2022. Madrid

On 17th and 18th February 2022, the iSee team members will meet in Madrid at Universidad Complutense Madrid to update progress on each work package and discuss the next steps. We will have the pleasure to welcome BT Spain team to a workshop about explainability challenges in cybersecurity operations and how some of their use cases may fit in iSee evaluation Cockpit and Explanation Experience Ontology instantiation.



Dr David Aha Director
for the Navy Center of
Applied
Research in AI
(NCARAI), USA



Dr Judith Masthoff
Professor
Human Centered
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Dr Frances Brazier
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Dr Manish Patel
CEO Jiva.ai



Micea Velिकासcu,
VP Ness Digital
Engineering;



Miguel Granda, Head of
Research & Innovation Policy
and Coordination of industry
4.0. Bosch Spain;



Mauricio Orozco del
Castillo, Chair of the
AAAIMX Board;



Abdoulaye Fadiga,
Head of Cyber Security
operations
BT France.



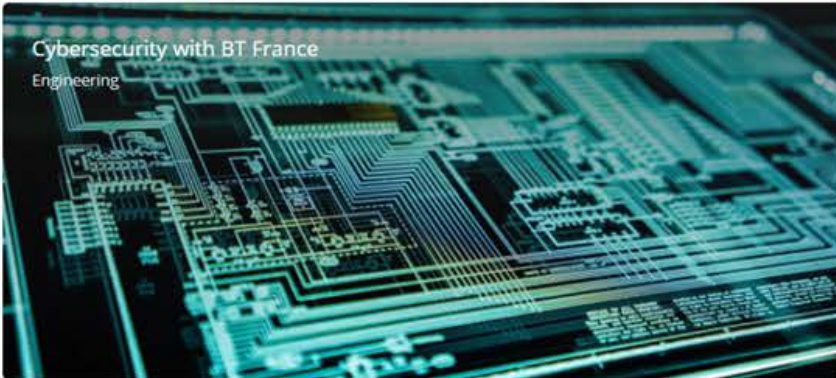
Radiology with Jiva.AI



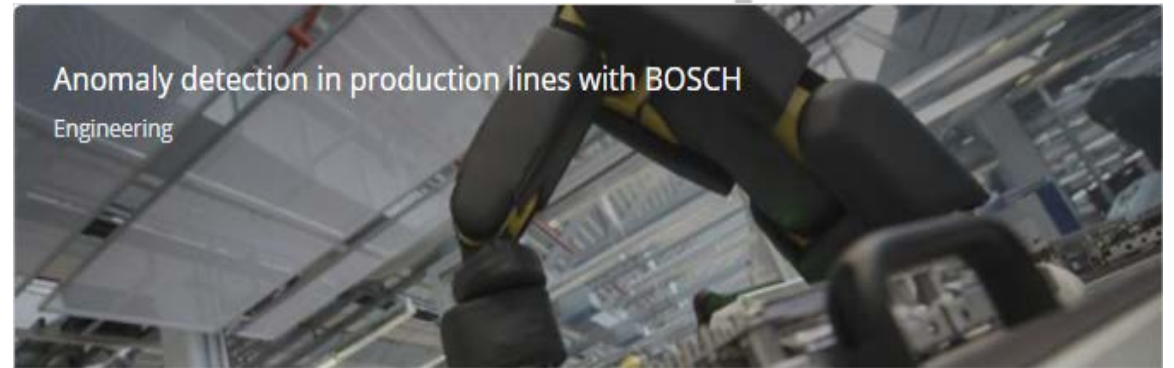
Natural Event Detection with IAAA-MX



Cybersecurity with BT France Engineering



Anomaly detection in production lines with BOSCH Engineering



Telecom with BT France Engineering



From explanations to experiences

To Whom? Personalization

End users:

physicians, judges, loan officers,...

Affected users:

patients, accused, loan applicants

AI system builders, stakeholders:

data scientists, developers

Regulatory bodies:

EU (GDPR), US Cov, council



When do we explain?

Deviations of users' needs and expectations

What to explain?

Investigate actors' perceptions of AI

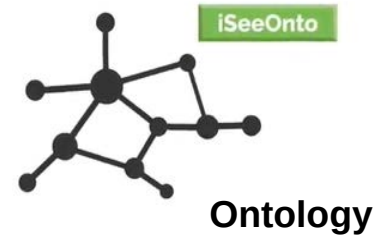
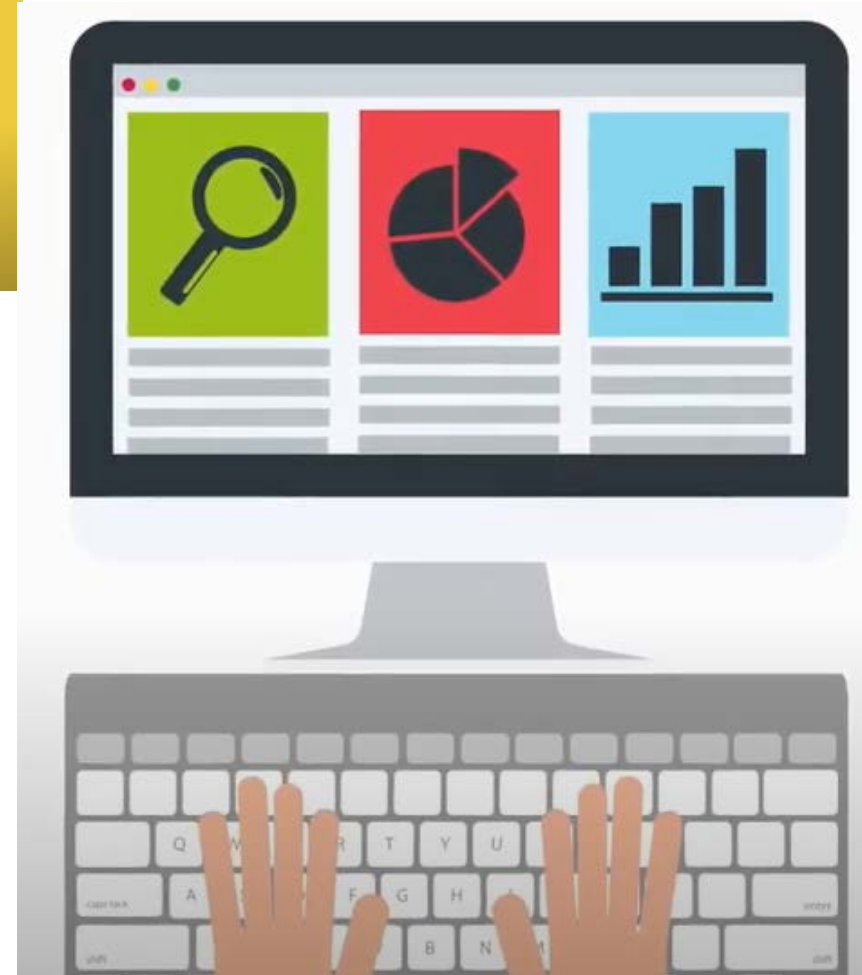
Actors' needs and expectations

Actors' Intents: trust/confidence, insights, understanding, performance, fairness

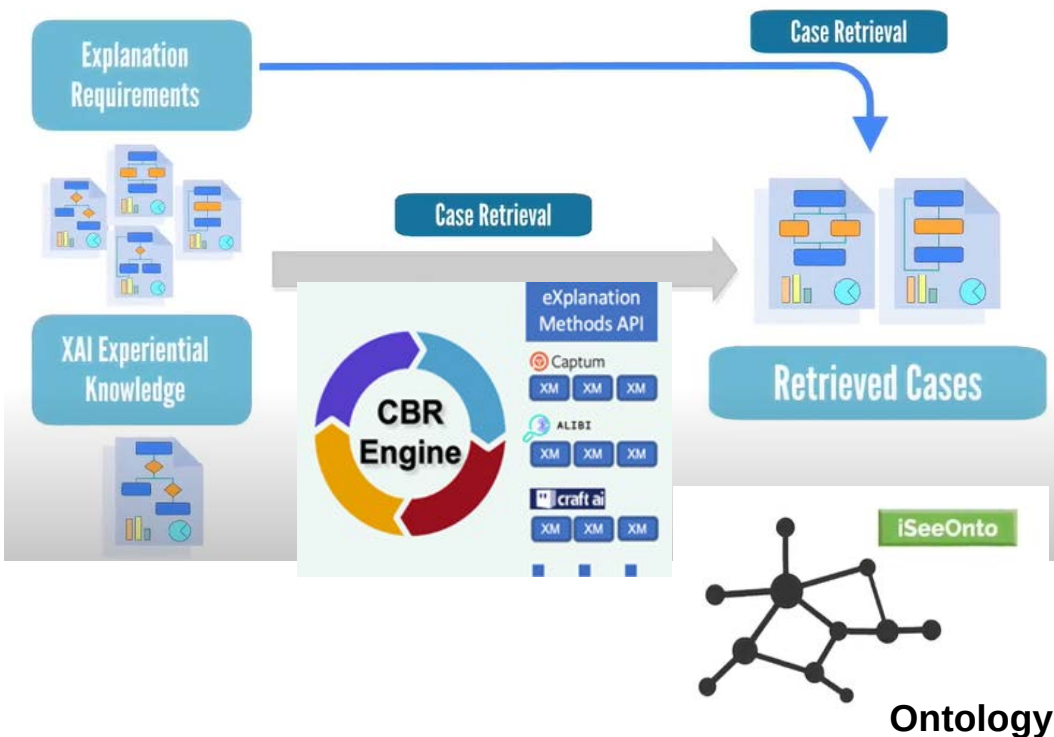
How do we explain?

- Combine and reuse existing explainers
- Include experiential knowledge

iSee proposal to the XAI challenges

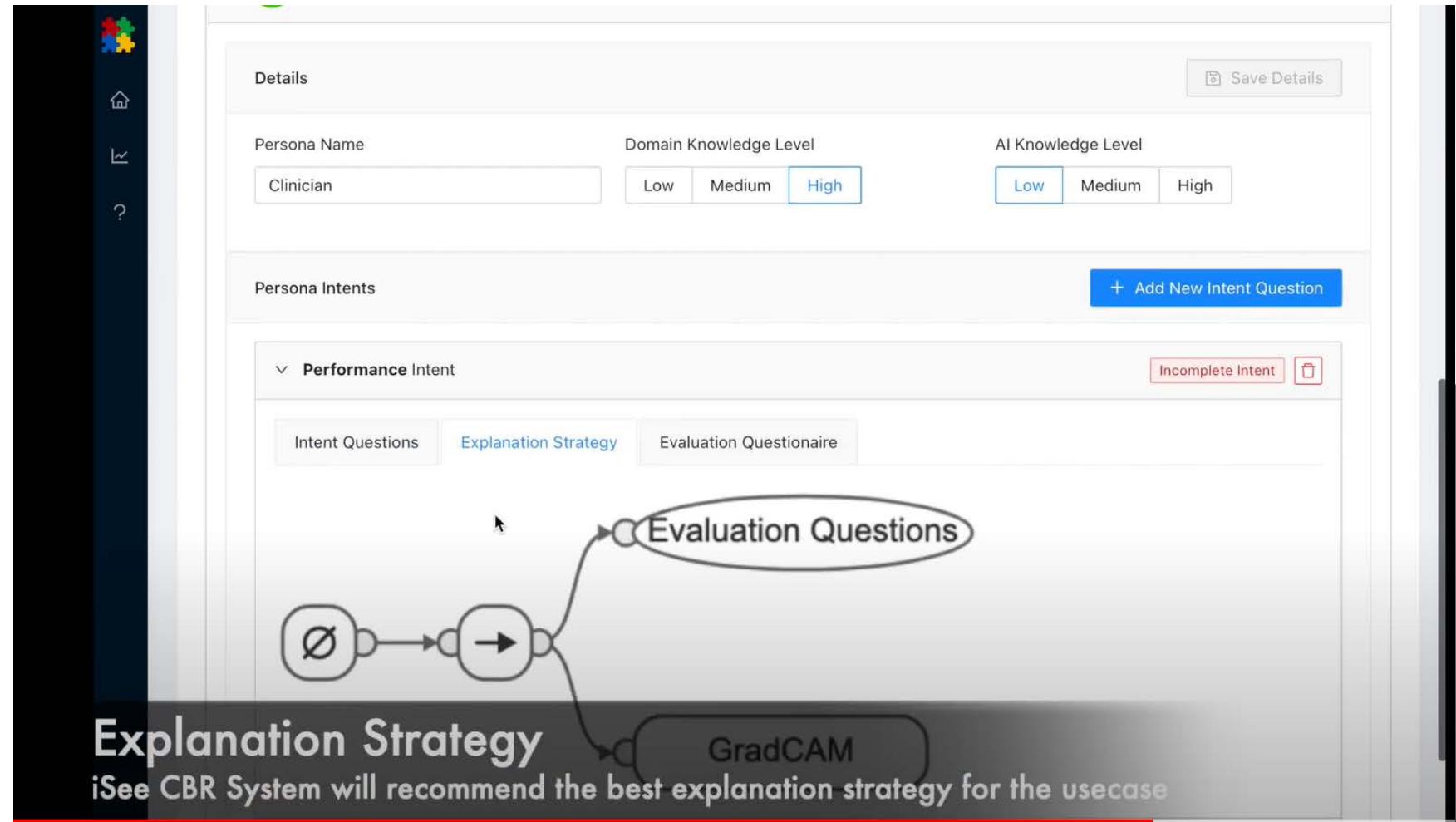


AI black box system +
persona profiles (final users)



CHISTERA Video contest 2022

Evaluation cockpit to capture and evaluate experiences using a user participatory approach



The screenshot displays the 'Evaluation cockpit' interface, which is used to configure and evaluate experiences. The interface is divided into several sections:

- Details:** Contains fields for 'Persona Name' (set to 'Clinician'), 'Domain Knowledge Level' (set to 'High'), and 'AI Knowledge Level' (set to 'Low'). A 'Save Details' button is located in the top right corner of this section.
- Persona Intents:** Features a '+ Add New Intent Question' button.
- Performance Intent:** This section is expanded, showing three tabs: 'Intent Questions', 'Explanation Strategy' (which is active), and 'Evaluation Questionnaire'. It includes an 'Incomplete Intent' status indicator and a trash icon.
- Diagram:** A flowchart is visible, showing a sequence of steps. The first step is a circle with a diagonal line through it, followed by a circle with an arrow pointing right. This sequence leads to a circle labeled 'Evaluation Questions', which is circled in red. Below this, a box labeled 'GradCAM' is shown, with an arrow pointing from the 'Evaluation Questions' circle to it.

Explanation Strategy
iSee CBR System will recommend the best explanation strategy for the usecase

<https://isee4xai.com/timeline/>

iSee journey so far...

February 2022 : Y1 Consortium meeting in Madrid.
Telecom use case represented in iSee



March 2022 : Chistera annual webinar



January 2022 : iSeeOnto ontology v1 is now online !



March 2022 : iSee Cockpit tool V1 and Explainers
catalogue V1 completed !

Year 1 outputs

<https://isee4xai.com/>

github.com/orgs/isee4xai/repositories



Overview Repositories Packages People Teams Projects Settings

Find a repository...

Type

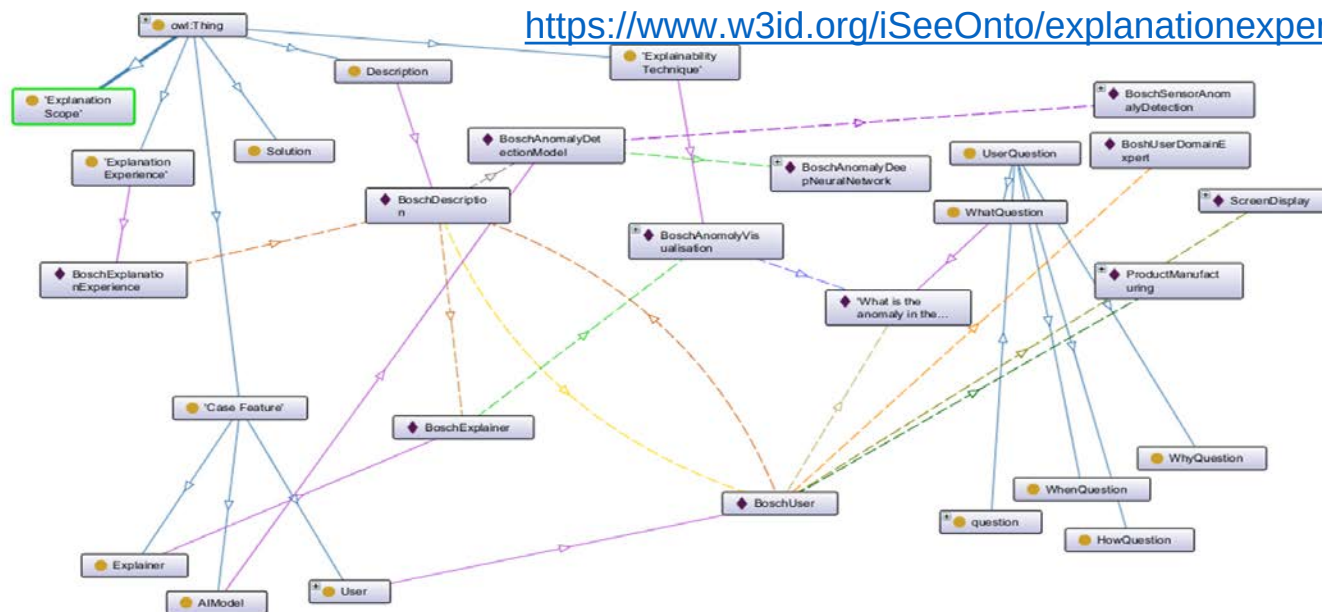
Language

Sort

New

ExplanationExperienceEditor Public

<https://www.w3id.org/iSeeOnto/explanationexperience> Updated 4 days ago

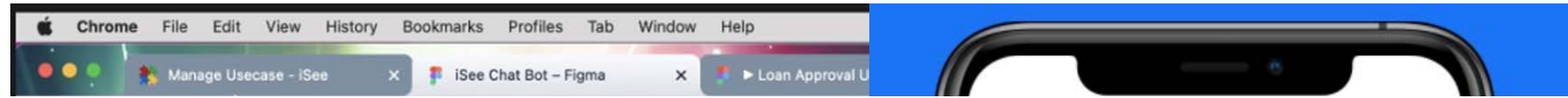


Updated 5 days ago

Updated 13 days ago

Updated on 17 Feb

Java 0 0 0 0 Updated on 31 Jan



Demos

Scientific publications

Deliverables

- Zenodo

- Jesus M. Darias, Belen Diaz-Agudo and Juan A. Recio-Garcia. **A Systematic Review on Model-agnostic XAI Libraries**. XCBR Workshop at ICCBR 2021. <https://iccb21.org/workshops> CEUR Proceedings <http://ceur-ws.org/Vol-3017/> (Sep 2021) 10.5281/zenodo.5838263
- Nirmalie Wiratunga, Anjana Wijekoon, Ikechukwu Nkisi-Orji, Kyle Martin, Chamath Palihawadana, and David Corsar. **Actionable Feature Discovery in Counterfactuals using Feature Relevance Explainers**. XCBR Workshop at ICCBR 2021. <https://iccb21.org/workshops> CEUR Proceedings <http://ceur-ws.org/Vol-3017> (Sep 2021)
- Juan A. Recio-García, Humberto Parejas-Llanovarcad, Mauricio Gabriel Orozco-del-Castillo, Esteban E. Brito-Borges. **A Case-Based Approach for the Selection of Explanation Algorithms in Image Classification**. ICCBR 2021: 186-200. Springer-Verlag. LNS. https://doi.org/10.1007/978-3-030-86957-1_13, https://link.springer.com/chapter/10.1007%2F978-3-030-86957-1_13
- Nirmalie Wiratunga, Anjana Wijekoon, Ikechukwu Nkisi-Orji, Kyle Martin, Chamath Palihawadana, and David Corsar. **DisCERN: Discovering Counterfactual Explanations using Relevance Features from Neighbourhoods**. Preprint of the paper accepted at the 33rd IEEE International Conference on Tools with Artificial Intelligence (ICTAI) IEEE International Conference on Tools with Artificial Intelligence 2021 (June) IEEE <https://doi.org/10.5281/zenodo.5837861> (to be published) <https://arxiv.org/abs/2109.05800>
- Anjana Wijekoon, Nirmalie Wiratunga, Ikechukwu Nkisi-Orji, Kyle Martin, Chamath Palihawadana and David Corsar. **Counterfactual Explanations for Student Outcome Prediction with Moodle Footprints** <http://ceur-ws.org/Vol-2894/> <http://ceur-ws.org/Vol-2894/short1.pdf> the SICSA eXplainable Artificial Intelligence Workshop 2021, Aberdeen, United Kingdom. CEUR Workshop Proceedings (CEUR-WS.org, ISSN 1613-0073)
- Dr. Harsha Kalutarage, Prof. Dr. Nirmalie Wiratunga, Dr. Sadiq Sani. Special Issue "Selected Papers from the AI-CyberSec 2021 Workshop in the 41st SGAI International Conference on Artificial Intelligence" https://www.mdpi.com/journal/electronics/special_issues/AI_CyberSec_2021_Workshop. Open access www.mdpi.com

iSee CHIST-ERA Project Document Repository

Recent uploads



March 22, 2022 (v1)

Project milestone

Restricted Access

View

iSee Deliverables of Milestone 1

Belen Diaz-Agudo; Nirmalie Wiratunga; Anne Liret; Derek Bridge; Juan A. Recio-García; Anjana Wijekoon; David Corsar; Kyle Martin; Ike Nkisi-Orji; Chamath Palihawadana; Bruno Fleish;

iSee Milestone 1 (month 9) - December 2021 Work packages: WP1, WP2, WP3, WP5, WP6 Index D2.3. Software. Retrieval-only iSee CBR system (iSee v1) (UCM, SW, PU) Back-end <https://github.com/isee4xai/back-end> Front-end <https://github.com/isee4xai/iSeeCockpit> D3.1. Similarity

Uploaded on March 22, 2022

March 22, 2022 (v0.2)

Other

Open Access

View

iSee Data Management Plan (v0.2)

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

The document details the Data Management Plan (DMP) for the iSee project. It describes how the different data produced or consumed by the project are handled during the entire lifetime of the project. The scope of this document is to provide a reference document describing how data assets are organi

Uploaded on March 22, 2022

January 11, 2022 (v1)

Journal article

Open Access

View

A Systematic Review on Model-agnostic XAI Libraries

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

During the last few years the topic explainable artificial intelligence (XAI) has become a hotspot in the ML research community. Model-agnostic interpretation methods propose separating the explanations from the ML model, making these explanation methods reusable through XAI libraries. In this paper

Uploaded on January 11, 2022

New upload

Community



iSee CHIST-ERA Project Document Repository

This community collection aggregates the documents associated to the project iSee: Building the AI you trust (**Intelligent Sharing of Explanation Experience by Users for Users**). iSee is an interactive toolbox for XAI with Case-based Reasoning at heart. It captures, shares and re-uses AI explanation experiences. **More info at:** <https://isee4xai.com/>

[Read more](#)**Curated by:**

isee4xai

Curation policy:

Internal documents: only members of the iSee consortium.

Year 1 outputs

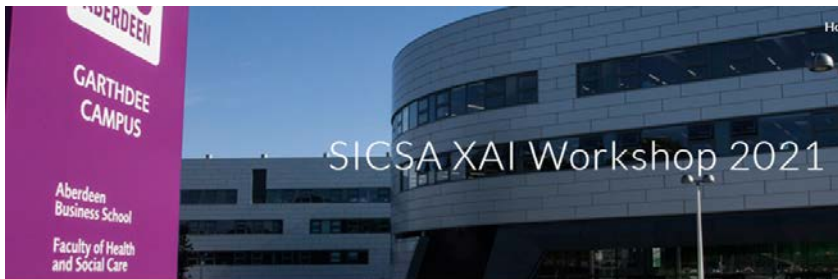
Community engagement activities to capture explanation experiences

AI and XAI Developers

Opportunity to include XAI strategies in iSee XCBR challenge

Application scenarios

Opportunity to participate in co-creation activities
<https://isee4xai.com/engage-industry-questionnaire/>

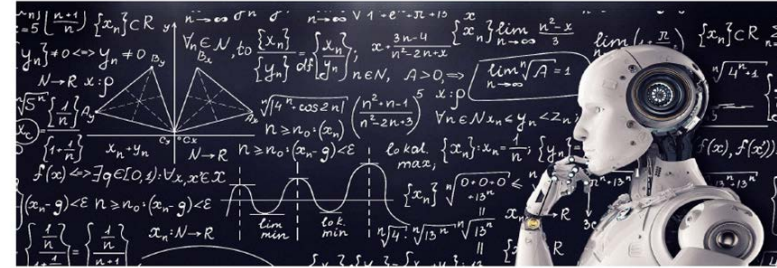


<https://www.sicsa.ac.uk/blog/sicsa-xai-workshop-2021/>

- Organization of dissemination and engagements events

September 2022

XCBR 2022 - Explainable AI Challenge



Goal

The objective of this challenge is to highlight your expertise, skills and experience in applying Explainable AI (XAI) techniques to a “blackbox” AI model, so that the predictions of the model can be understood, improved or challenged by the users interacting with or impacted by the model.

<https://gaia.fdi.ucm.es/events/xcbr/>



Registration Form: Tommy Flowers Network - iSee Workshop

Tommy Flowers Network conference on Data Science - The beating heart of AI

<https://isee4xai.com/engage-tommy-flowers-network-ai-conference/>

What do users want when explaining an AI system?

- **iSee platform**
 - Ease the necessity of XAI as a service for society
 - Policy changes through evidence-based **explanation best practices**.
 - Ontology and representation standards for XAI scenarios
 - Evaluation cockpit
- **Create an XAI compliance certification for AI systems**



hello@isee4xai.com

- **Ontology**

- <https://www.w3id.org/iSeeOnto/explanationexperience>
- <https://isee4xai.github.io/iSeeOnto/docs/explanationexperience-en.html>

- **Software repositories**

<https://github.com/orgs/isee4xai/repositories>

- **Zenodo iSee community**

<https://zenodo.org/communities/isee4xai/>

why?
how? who?
WHEN?
Where?