Intelligent Sharing of Explanation Experience by Users for Users

www.isee4xai.com

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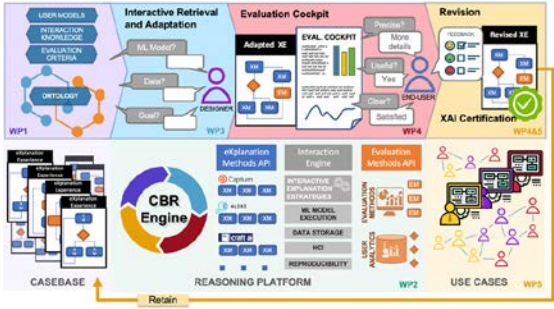
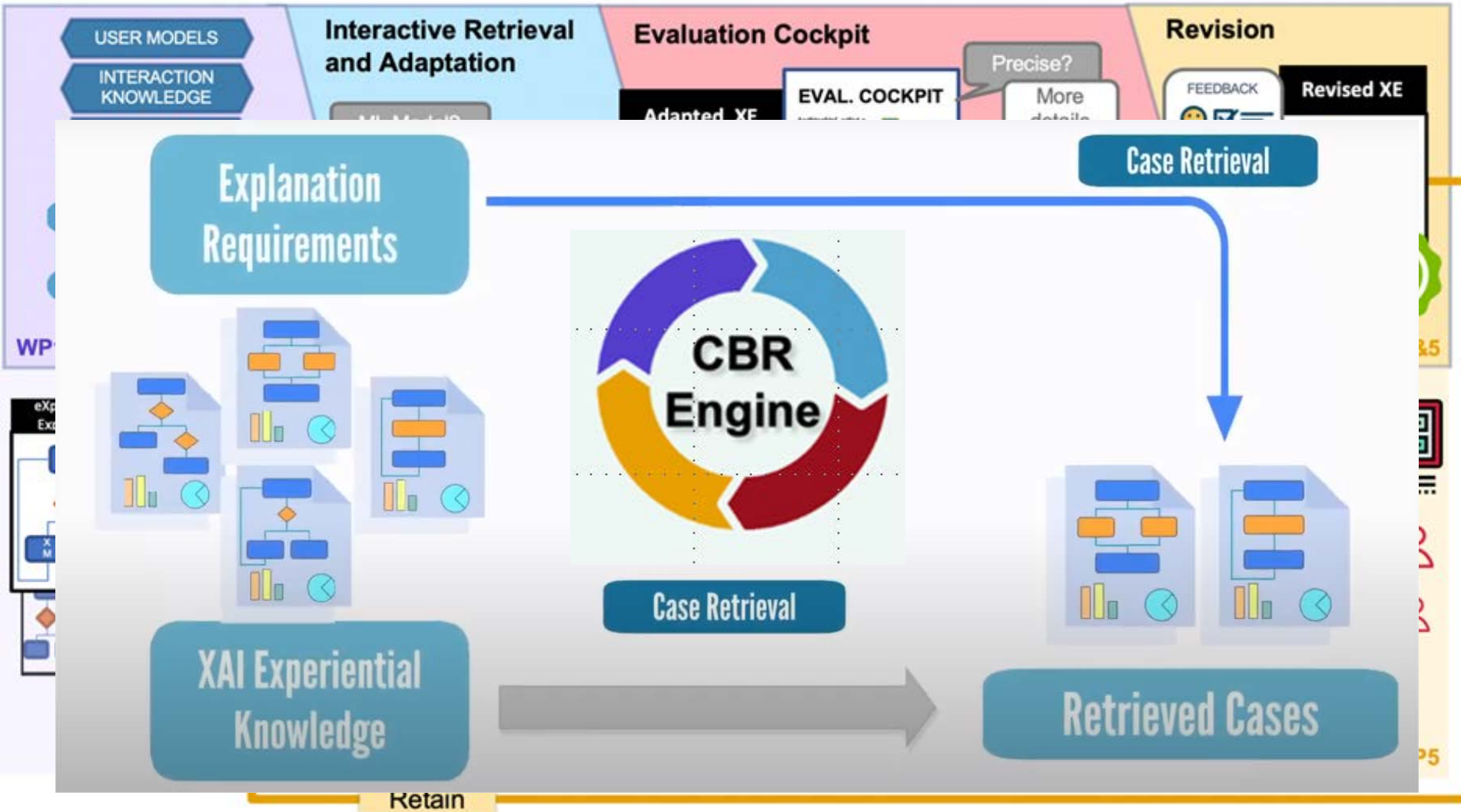
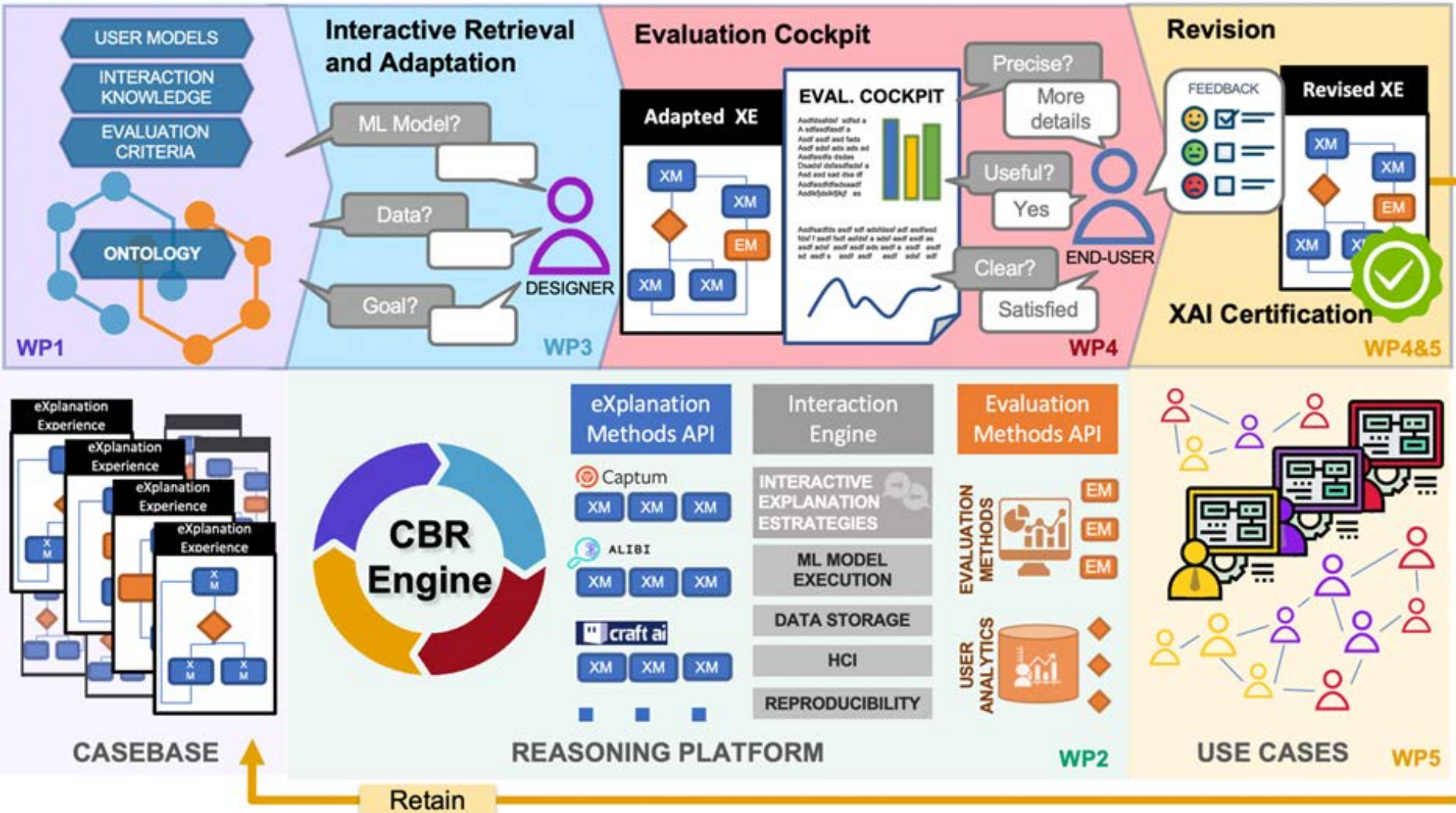
CHIST-ERA-19-XAI-008

iSee Our proposal to the XAI challenges



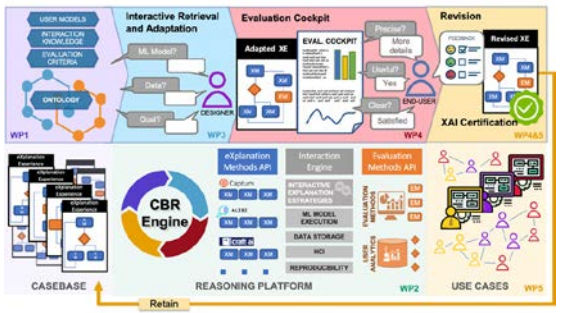
- **Promoting the use of explanation strategies**
- **Capture, share and reuse explanation experiences**
- **Provide the AI community with an unifying open source platform**
  - Underpinned by case-based reasoning (CBR)
  - Experiences of applying an explanation strategy to an ML task can be captured as cases and retained in a case base for **future reuse.**
- **Recommend** how best to explain ML predictions to other users in similar circumstances
- **User participatory approach**
  - **Co-creation of explanation strategies** between machine and users
  - Evaluation of the **utility of the explanations**


USER MODELS
INTERACTION KNOWLEDGE
Interactive Retrieval and Adaptation
Evaluation Cockpit
EVAL. COCKPIT
Precise?
More
Revision
FEEDBACK
Revised XE
Explanation Requirements
Case Retrieval
CBR Engine
Case Retrieval
XAI Experiential Knowledge
Retrieved Cases
Retain

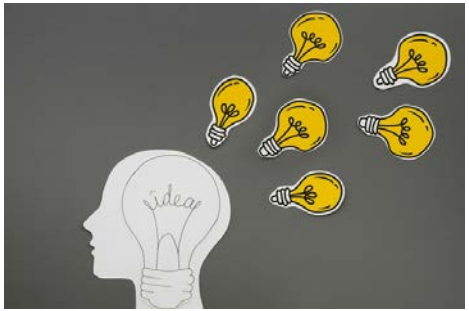

USER MODELS
INTERACTION KNOWLEDGE
EVALUATION CRITERIA
ONTOLOGY
WP1
Interactive Retrieval and Adaptation
ML Model?
Data?
Goal?
DESIGNER
WP3
Evaluation Cockpit
Adapted XE
XM
EM
EVAL. COCKPIT
Precise?
More details
Useful?
Yes
Clear?
Satisfied
END-USER
WP4
Revision
FEEDBACK
Revised XE
XAI Certification
WP4&5
eXplanation Experience
CASEBASE
CBR Engine
eXplanation Methods API
Captum
ALIBI
craft ai
Interaction Engine
INTERACTIVE EXPLANATION ESTRATEGIES
ML MODEL EXECUTION
DATA STORAGE
HCI
REPRODUCIBILITY
Evaluation Methods API
EVALUATION METHODS
USER ANALYTICS
REASONING PLATFORM
WP2
USE CASES
WP5
Retain

iSee Platform

- The key components
  - Library of XAI strategies
  - Ontology
    - Vocabulary and metrics to evaluate their acceptability and suitability
  - Evaluation cockpit



- Main challenges
  1. **XAI community engagement**
     - Capture explanation best practices
  2. Evaluation with human in the loop
     - User acceptance of XAI strategies
     - Construct explanations based on interactions



iSee

Consortium partners

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

- Knowledge-based approaches in CBR, deep learning, transfer to platform development (jColibri and COLIBRI studio).
- Existing 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, Ike

- Intent mining, Conversational digital behavioural change interventions in healthcare systems (use case 2)
- Initiative in the National Subsea Centre, where AI systems play an important role for Oil and Gas operations.

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, Abdoulaye Fadiga, Bruno Fleisch (BT France),Dipankar Nath (BT Hungary)

- Responsible use of AI from an ethical and regulatory perspective
- Open Innovation ecosystem to help businesses in complying with obligations of explaining AI decisions.
- Existing research on use case 1 and 5 (Active learning in Telecom network operations & security incident management).
- User intent and impact modelling applied to explanation co-design
- Cyber defence research

Advisory Board

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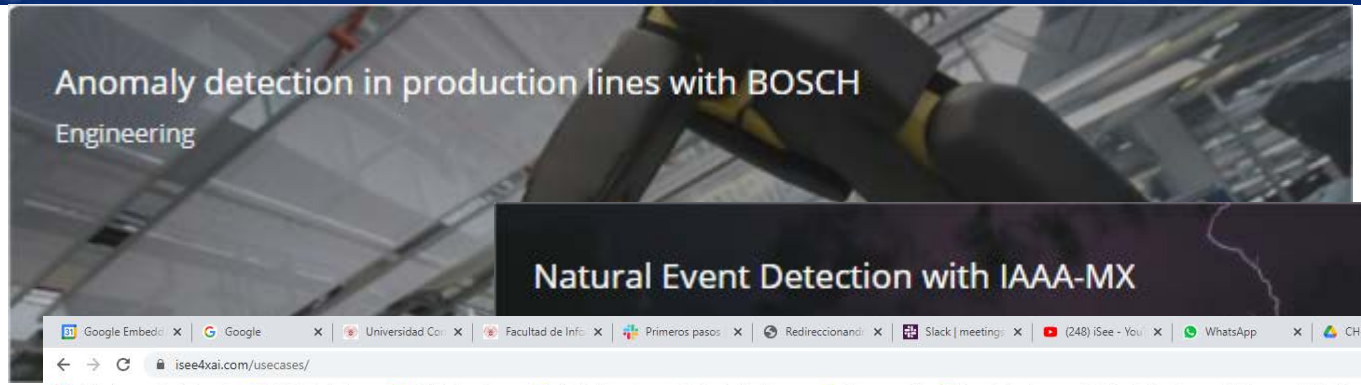
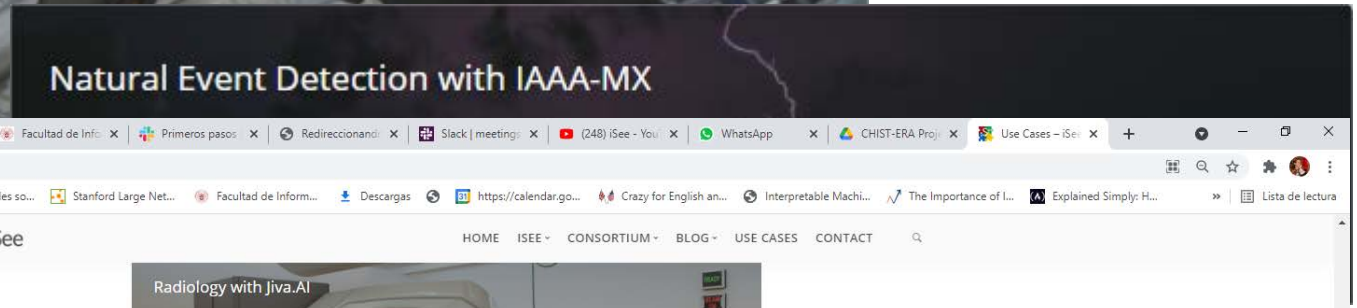
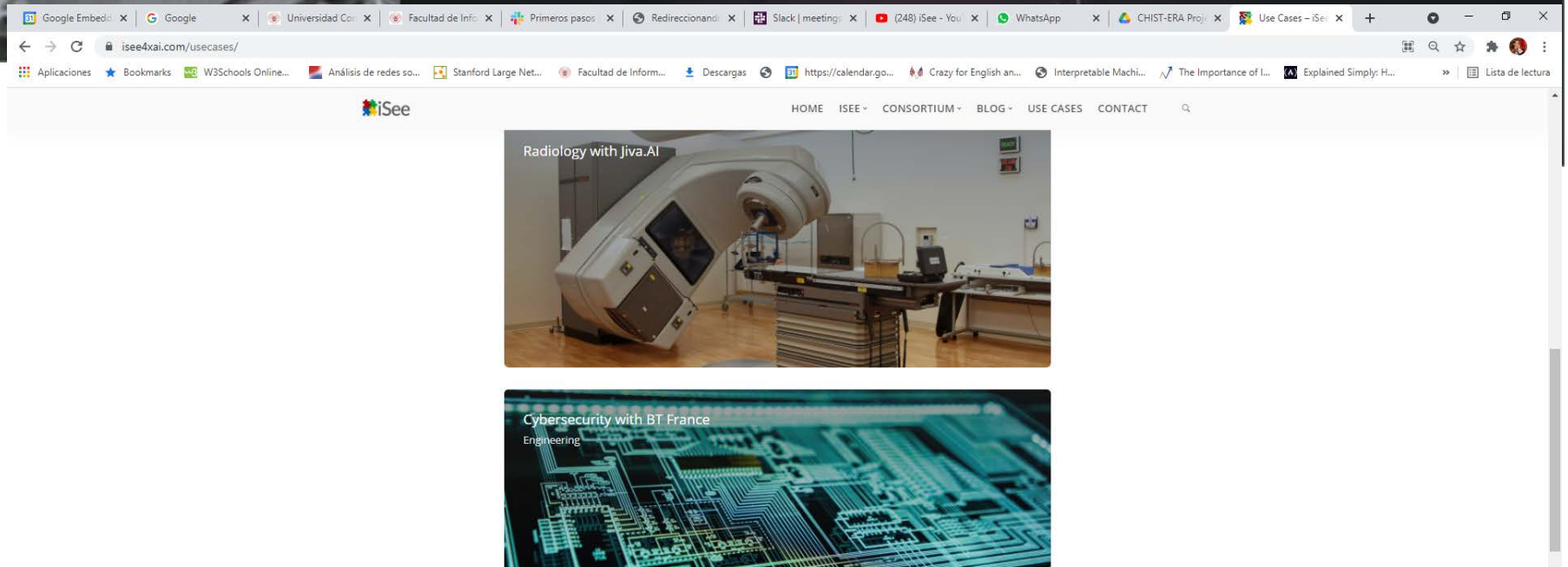
https://isee4xai.com/usecases/







Impact and Exploitation

- **iSee platform**
  - Ease the necessity of XAI as a service for society.
  - Policy changes through evidence-based **explanation best practices.**
- **Results:**
  - Ontology and software objects
  - Opportunity for XAI developers to include XAI strategies in iSee
- **Community engagement**
  - **SICSA-XAI workshop (June) https://sites.google.com/view/sicsa-xai-workshop**
  - **CBR-XAI workshop (September) https://gaia.fdi.ucm.es/events/xcbr/**
- **Publications to Open science repository and standards**
- **Create a European XAI compliance certification**

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CHIST-ERA Workshop Video Contest

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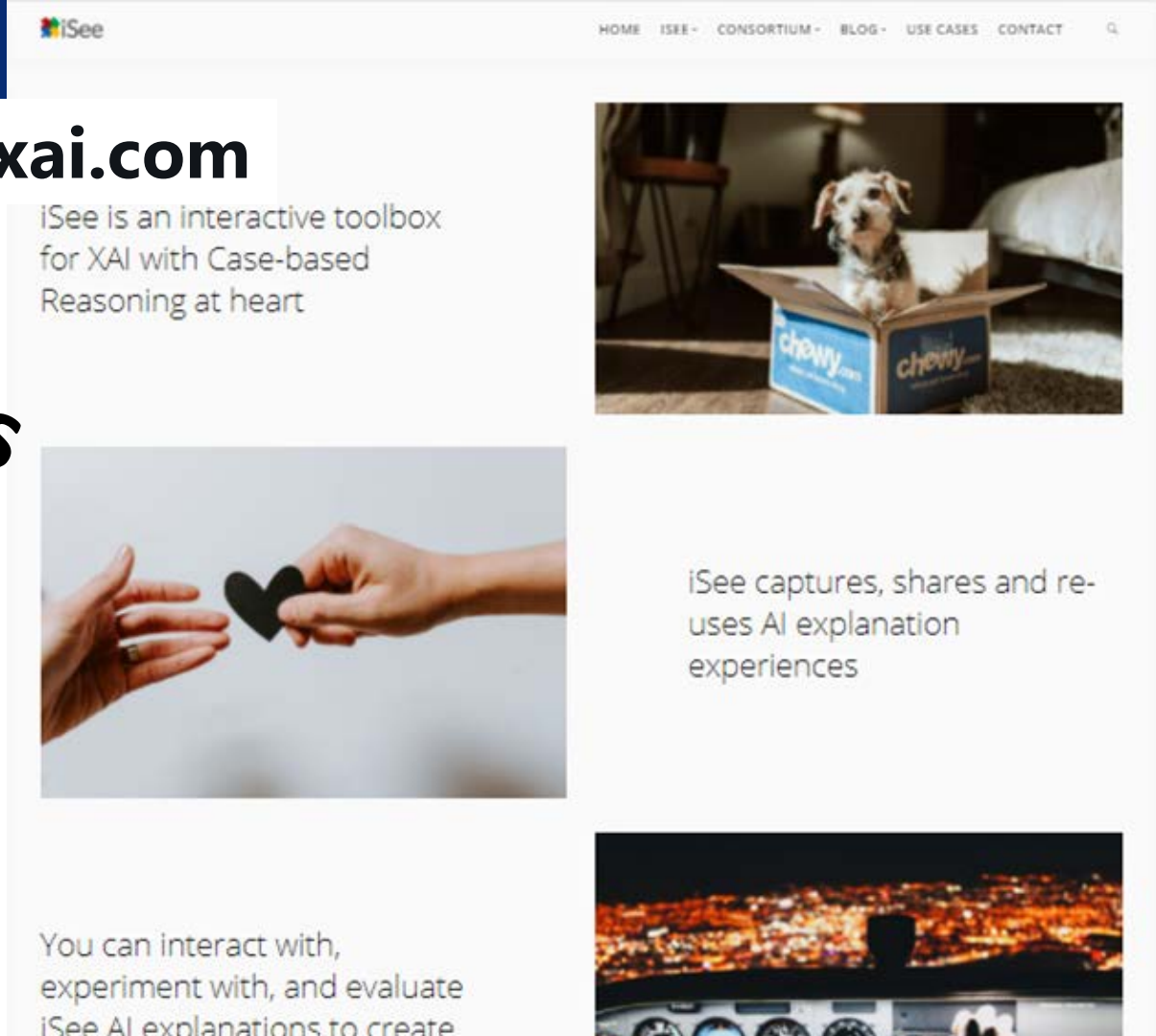
Questions



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