
P2976

Submitter Email: rkozma@memphis.edu
Type of Project: New IEEE Standard
Project Request Type: Initiation / New
PAR Request Date: 08 Dec 2020
PAR Approval Date: 10 Feb 2021
PAR Expiration Date: 31 Dec 2025
PAR Status: Active

1.1 Project Number: P2976
1.2 Type of Document: Standard
1.3 Life Cycle: Full Use

2.1 Project Title: Standard for XAI – eXplainable Artificial Intelligence - for Achieving Clarity and Interoperability of AI Systems Design

3.1 Working Group: Standard for XAI - eXplainable AI Working Group(CIS/SC/XAI WG)

3.1.1 Contact Information for Working Group Chair:

Name: Autilia Vitiello

Email Address: autilia.vitiello@unina.it

3.1.2 Contact Information for Working Group Vice Chair:

None

3.2 Society and Committee: IEEE Computational Intelligence Society/Standards Committee(CIS/SC)

3.2.1 Contact Information for Standards Committee Chair:

Name: Robert Kozma

Email Address: rkozma@memphis.edu

3.2.2 Contact Information for Standards Committee Vice Chair:

None

3.2.3 Contact Information for Standards Representative:

None

4.1 Type of Ballot: Individual

4.2 Expected Date of submission of draft to the IEEE SA for Initial Standards Committee Ballot:

Jan 2024

4.3 Projected Completion Date for Submittal to RevCom: Jul 2024

5.1 Approximate number of people expected to be actively involved in the development of this project: 20

5.2 Scope of proposed standard: This standard defines mandatory and optional requirements and constraints that need to be satisfied for an AI method, algorithm, application or system to be recognized as explainable. Both partially explainable and fully or strongly explainable methods, algorithms and systems are defined. XML Schema are also defined.

5.3 Is the completion of this standard contingent upon the completion of another standard? No

5.4 Purpose: This standard enables engineers and scientists developing AI systems to design systems with improved interoperability, supporting the export and import of AI systems and solutions from one implementation to another.

The aim is to provide researchers, developers and designers of AI (including machine learning, rule-based, neural network and other) systems and industrial applications with a unified and high-level methodology for classification of their products as partially or fully explainable. This standard includes an "XML Schema" describing the requirements and constraints that have to be satisfied.

5.5 Need for the Project: Today, there is no standard which provides a unified and high-level methodology for classification of AI products as partially or fully explainable, but there is a great need for it (see, for example, Defense Advanced Research Project Agency (DARPA) program on XAI, there are numerous products that claim XAI ability, etc). Today, scientists and engineers developing AI systems are constraint by their specific products, customers and conflicting interests. The problem becomes more acute when interoperability comes to play. A unified standard enables streamlining of claims and quality, higher productivity, end product quality and customer satisfaction.

5.6 Stakeholders for the Standard: Engineers, scientists developing AI systems and all end users.

6.1 Intellectual Property

6.1.1 Is the Standards Committee aware of any copyright permissions needed for this project?

No

6.1.2 Is the Standards Committee aware of possible registration activity related to this project?

No

7.1 Are there other standards or projects with a similar scope? Yes

Explanation: National Institute of Standards and Technology (NIST) just published a draft (August 2020)

National Institute of Standards and Technology Interagency/Internal Report NISTIR 8312 with the title "Four Principles of Explainable Artificial Intelligence" is open for discussion. It is not a formal standard and it is less technical; it has an emphasis on ethics and human side.

World Wide Web Consortium (W3C) published on 31 Oct 2018 an online post in its AI Knowledge Representation (AI KR) Community group called "Toward a Web Standard for Explainable AI?" – this is not a standard on its own, but indicates interest in the W3C towards this topic.

7.2 Is it the intent to develop this document jointly with another organization? No

8.1 Additional Explanatory Notes: