**Prompt**

I would like to explore the current state of research regarding "requirements completeness" in requirements engineering. The research focus is on understanding how to detect whether a set of given requirements for a software project are considered to be "complete", how to quantify the "completeness" for a set of given requirements in a software project, and how to identify the missing requirements from a given set of requirements for a software project.

As a world-class expert in software requirements engineering specializing in requirements completeness, your task is to meticulously analyze the provided academic paper and extract precise information. Before answering any questions, read the entire document carefully multiple times, paying close attention to all sections, tables, figures, and footnotes.

Key Instructions:

- Read the entire paper thoroughly multiple times before answering any questions.

- Provide answers based solely on the paper's content.

- For any referenced work, provide the exact citation in IEEE format, not just a number (e.g., [2]), or a link if it’s linkable or referenced from an external source.

- If a question cannot be answered based on the paper, state "Not addressed in the paper."

- Quote relevant text verbatim where appropriate, using proper markdown formatting.

- Pay special attention to tables, figures, and mathematical formulas, as they often contain crucial information about metrics and methods.

- If you're unsure about any information, state your uncertainty and provide the closest relevant information you can find in the paper.

- Ensure your response is well-formatted, using headers, numbered lists, and bullet points for clarity.

- Include ALL relevant methods, techniques, and concepts mentioned in the paper, not just the main ones.

Please answer the following questions based on the paper (have a newline between each answer):

Paper inclusion/exclusion

Should this paper be included or excluded in this research?  
[Select: 1. Yes, 2. No] (the selection here is based on the full paper and our research and scope that were provided earlier)

General Information

Study ID: [Will be given to you]

Title: [Full title of the paper]

Countries of the authors: [List all countries]

Year of Publication: [YYYY]

Publication Type: [Select one: 1. Journal, 2. Magazine, 3. Conference, 4. Book, 5. Web, 6. Other]

Name of the venue: [Full name of journal/conference/etc.]

Paper Abstract: [Provide the full abstract verbatim]

Definitions of Completeness

Does the paper define the completeness of requirements? [Select: 1. Yes, 2. No]

If yes, list ALL explicit definitions provided that describe what constitutes complete requirements:

For each item:

Text: [Quote the text verbatim]

Source: [Specify if proposed in this paper or referenced. If referenced, provide the full citation in IEEE format or a link if it’s linkable]

Explanation: [Explain in your own words what this definition means in practical terms]

Note: Include only formal definitions or explicit criteria that clearly state what makes requirements complete. Do not include detection methods, techniques, or statements that merely mention completeness without defining it. If no explicit definitions are provided, state "No explicit definitions of completeness provided in the paper."

Detection of Incompleteness

Does the paper propose or reference any methods or techniques used to detect incompleteness of requirements?[Select: 1. Yes, 2. No]

If yes, list ALL methods, techniques, or processes used to detect incompleteness of requirements:

For each item:

Name: [Name of method/technique/process]

Description: [Detailed description]

Source: [Specify if proposed in this paper or referenced. If referenced, provide the full citation in IEEE format or a link if it’s linkable]

Detection Process: [Explain how it detects incompleteness]

Note: Focus on specific procedures or algorithms used to identify incomplete requirements. Do not include general criteria or definitions here.

Quantification of Completeness

Does the paper suggest methods or metrics to quantify the completeness of requirements? [Select: 1. Yes, 2. No]

If yes, list ALL metrics or criteria used for quantification:

For each metric:

Name: [Name of metric]

Description: [Detailed description]

Formula: [Mathematical formulation, if provided]

Source: [Specify if proposed in this paper or referenced. If referenced, provide the full citation in IEEE format or a link if it’s linkable]

List ALL methodologies used to quantify completeness:

For each methodology:

Name: [Name of methodology]

Description: [Detailed description]

Source: [Specify if proposed in this paper or referenced. If referenced, provide the full citation in IEEE format or a link if it’s linkable]

Quantification Process: [Explain how it quantifies completeness]

Correction of Incompleteness

Does the paper propose or reference any concepts, methods, or frameworks to correct the completeness of requirements? [Select: 1. Yes, 2. No]

If yes, list ALL methods or concepts used for correction:

For each method/concept:

Name: [Name of method/concept]

Description: [Detailed description]

Source: [Specify if proposed in this paper or referenced. If referenced, provide the full citation in IEEE format or a link if it’s linkable]

Process: [Steps involved, if provided]

How were these methods or concepts evaluated?

Provide a detailed description of any evaluation methods, including:

Evaluation approaches used (e.g., case studies, experiments, simulations)

Metrics or criteria used to assess effectiveness

Datasets or case studies employed

Key results and findings

Any limitations or challenges mentioned in the evaluation process

Note: If no formal evaluation was conducted, describe any informal assessments, illustrative examples, or theoretical arguments provided to support the proposed methods or concepts.

Tools for Completeness

Does the paper propose OR reference any tools for achieving or measuring the completeness of requirements? [Select: 1. Yes, 2. No]

If yes, provide the following information for ALL tools mentioned:

For each tool:

Name: [Tool Name]

Source: [Specify if proposed in this paper or referenced. If referenced, provide the full citation in IEEE format or a link if it’s linkable]

Purpose: [Select all that apply: Detect, Measure, Correct, Other (specify)]

Implementation: [Description of Tool Implementation]

Functionality: [Description of Functionality]

Status: [Select all that apply: Proposed, Implemented, Validated]

Validation: [If validated, describe the method of validation and key results. If not validated, state "Not validated in this paper."]

AI and LLMs Usage

Does the paper mention the use of Artificial Intelligence (AI) or Large Language Models (LLMs) in the context of requirements? [Select: 1. Yes, 2. No]

If yes, provide the following information for ALL AI/LLM models mentioned:

For each AI/LLM model:

Model: [Model Used or Proposed]

Purpose: [Detecting/Measuring/Quantifying/Other (specify)]

Details: [Detailed Description]

Source: [Specify if proposed in this paper or referenced. If referenced, provide the full citation in IEEE format or a link if it’s linkable]

Recheck Key Instructions:

Critically evaluate each item you identify to ensure it strictly meets the criteria specified in the question. Explain your reasoning for including each item.

When referencing external work, always provide the full citation in IEEE format. Do not use bracketed numbers or other shorthand notation.

Before submitting your answer, review each item to ensure it strictly adheres to all aspects of the instructions.

If a question cannot be answered based on the information provided in the paper, explicitly state "Not addressed in the paper."

Ensure your response is well-formatted, using headers, numbered lists, and bullet points for clarity.

Include ALL relevant information from the paper, not just the main points.

If you're unsure about any information, state your uncertainty and provide the closest relevant information you can find in the paper.

Remember to be thorough and accurate in your analysis, ensuring that all relevant information from the paper is captured and properly contextualized.

Provide your response in two formats:

A well-structured, easy-to-read report with clear headings corresponding to the form sections.

A pipe-delimited ("|") file with:

Row 1: Question numbers and ultra-short descriptions

Row 2: Corresponding answers, using "N/A" for unanswered questions

MAKE REASONINGS, RATIONALES, AND LOGICAL THINKING BEFORE AND AFTER ANSWERING EACH QUESTION TO ENSURE UR ANSWER IS CORRECT AND ACTUALLY RELATED.

READ THE FULL PAPER GIVEN BEFORE ANSWERING, MAKE SURE U INCLUDED EVERYTHING.