Finalized Distinct Codes Merging and Grouping into Main Identified Themes and Sub-Themes

Theme1 (RQ1): How are data annotation requirements defined?	
Deductive codes	**(merged codes: Sub-Themes)**
Definition and Specification of Requirements	Requirements elicitation
Definition and Specification of Requirements: Requirement Gathering	
Definition and Specification of Requirements: Specific Requirements	Specifying quality attributes for data annotation requirements
Definition and Specification of Requirements: Edge case inclusion	
Evolving requirements	Evolving requirements
Definition and Specification of Requirements: Breaking down high-level requirements into tasks	Reporting and documenting requirements
Definition and Specification of Requirements: Documentation methods	
Theme2 (RQ2): What are the challenges in ensuring high-quality data annotation requirements?	
Deductive codes	**(merged codes: Sub-Themes)**
Challenges in Annotation Requirements: Complexity in annotating rare scenarios	Edge case coverage
Challenges in Annotation Requirements: Defining requirements for complex/edge cases	
Definition and Specification of Requirements: Edge case inclusion	
Challenges in Annotation Requirements: Defining clear and unambiguous requirements	Ambiguous requirements
Challenges in Annotation Requirements: Handling evolving requirements	Evolving requirements
Challenges in Annotation Requirements: Inconsistencies in requirements guidelines	Inconsistencies in requirements guidelines
Challenges in Annotation Requirements: Requirement misalignment	
Challenges in Annotation Requirements: Trade-offs between speed and accuracy	Resource limitations
Challenges in Annotation Requirements: Limitations in existing annotation tools.	
Challenges in Annotation Requirements	Challenges in Annotation Requirements
Theme3 (RQ3): What are the practitioners' recommendations to improve data annotation requirements?	
Deductive codes	**(merged codes: Sub-Themes)**
Compliance and Ethical Considerations	Compliance and Ethical Considerations
Compliance and Ethical Considerations: Ensuring compliance with ethical standards	

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Compliance and Ethical Considerations: Privacy and data compliance	
Compliance and Ethical Considerations: Safety-related requirements for AI systems	
Challenges Mitigation in Annotation Requirements	Challenges Mitigation in Annotation Requirements
Challenges Mitigation in Annotation Requirements: Interdisciplinary collaboration for annotation requirements	
Challenges Mitigation in Annotation Requirements: Developing Robust Guidelines	
Challenges Mitigation in Annotation Requirements: Domain-Specific Guidelines	
Challenges Mitigation in Annotation Requirements: Ensuring fairness and minimizing bias	
Challenges Mitigation in Annotation Requirements: Handling Edge Cases	
Challenges Mitigation in Annotation Requirements: Insufficient context provided	
Challenges Mitigation in Annotation Requirements: Iterative Feedback Loops	
Challenges Mitigation in Annotation Requirements: Optimizing the requirements guidelines	
Challenges Mitigation in Annotation Requirements: Use of Automation Tools	
Quality Assurance for Data Annotation Requirements	Quality Assurance for Data Annotation Requirements
Quality Assurance for Data Annotation Requirements: Ensuring annotation quality	
Quality Assurance for Data Annotation Requirements: Maintaining consistency across annotators/teams	
Quality Assurance for Data Annotation Requirements: Scaling annotation processes	
Theme4 (RQ4): What is the relationship between data annotation requirements, the annotation process, annotated data quality, and AI-enabled perception system performance?	
Deductive codes	**(merged codes: Sub-Themes)**
Relationship Between Requirements and Annotated Data: Impact of annotation requirements on annotation quality	Annotation Requirements quality impact on annotation quality
Relationship Between Requirements and Annotated Data: Impact of annotation requirements on perception system quality	Annotation Requirement quality impact on perception system