

QUALIFICATION FILE – Micro Credentials

Application of Data Annotation in Education

☒ Public ☐ Private

☐ Upskilling ☐ Dual/Flexi Qualification ☐ For ToT ☐ For ToA

☐ General ☐ Multi-skill (MS) ☐ Cross Sectoral (CS) ☒ Future Skills ☐ OEM

NCrF/NSQF Level: 3.5

Submitted By:

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Section 1: Basic Details

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1.	Micro Credentials-Qualification Name	Application of Data Annotation in Education	
2.	Sector/s	IT-ITeS	
3.	National Qualification Register (NQR) Code & Version (Will be issued after NSQC approval.)	NM-3.5-IT-03809-2025-V1-NIELIT	4. NCrF/NSQF Level: 3.5
5.	Brief Description of the Micro Credential	This course enables learners to understand and apply data annotation in the education sector by working with education-specific datasets such as student performance, curriculum content, and assessment data. It emphasizes ethical data handling, privacy compliance, and quality standards while providing hands-on experience with open-source annotation tools. Learners apply techniques like NER and text classification through real-world, project-based educational scenarios.	
6.	Eligibility Criteria for Entry for a Student/Trainee/Learner/Employee	Entry Qualification & Relevant Experience:	
		Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)
		**10 th with pursuing continuous schooling	No Experience required
		**8 th with 2 years of NTC in the field of IT Sector	No Experience required
		**8 th	3 Year Relevant Experience in IT
		Previous relevant Qualification of NSQF Level 3	1.5-year relevant experience in IT
		** Should have a basic understanding of coding. Prerequisite: Fundamentals of Data Annotation using Python	
7.	Credits Assigned to this Qualification, Subject to Assessment (as per National Credit Framework (NCrF))	1 Credits	8. Common Cost Norm Category (I/II/III) (wherever applicable): Category-II
9.	Any Licensing Requirements for Undertaking Training on This Qualification (wherever applicable)	NA	
10.	Expected Outcomes of the Micro Credential	Terminal learning outcomes are: - Identify and explain various types of education-related data and articulate the role of data annotation in enhancing teaching-learning processes, learner assessment, personalization, and institutional decision-making. - Demonstrate responsible handling of education-specific data by applying ethical principles, learner privacy, consent, and relevant data protection norms while performing data annotation tasks.	

		Apply appropriate data annotation techniques such as Named Entity Recognition (NER), text classification, bounding boxes, polygons, and speech-to-text using open-source annotation tools, while ensuring accuracy and quality of annotated datasets.												
11.	Training Duration by Modes of Training Delivery (Specify Total Duration as per selected training delivery modes and as per requirement of the qualification)	☒ Offline Only ☐ Online Only ☐ Blended <table border="1"> <tr> <th>Training Delivery Modes</th><th>Theory (Hours)</th><th>Practical (Hours)</th><th>Total (Hours)</th></tr> <tr> <td>Classroom (Offline)</td><td>10</td><td>20</td><td>30</td></tr> </table>	Training Delivery Modes	Theory (Hours)	Practical (Hours)	Total (Hours)	Classroom (Offline)	10	20	30				
Training Delivery Modes	Theory (Hours)	Practical (Hours)	Total (Hours)											
Classroom (Offline)	10	20	30											
12.	Assessment Criteria	<table border="1"> <tr> <th>Theory (Marks)</th><th>Practical (Marks)</th><th>ES/Internal Assessment (Marks)</th><th>Project/OJT (Marks)</th><th>Total (Marks)</th><th>Passing %age</th></tr> <tr> <td>25</td><td>25</td><td>00</td><td>00</td><td>50</td><td>50%</td></tr> </table> The centralized online assessment is conducted by the Examination Wing, NIELIT Headquarters. *Assessment strategy shall be as per NIELIT Norms prevailing at times.	Theory (Marks)	Practical (Marks)	ES/Internal Assessment (Marks)	Project/OJT (Marks)	Total (Marks)	Passing %age	25	25	00	00	50	50%
Theory (Marks)	Practical (Marks)	ES/Internal Assessment (Marks)	Project/OJT (Marks)	Total (Marks)	Passing %age									
25	25	00	00	50	50%									
13.	Is the Qualification Amenable to Persons with Disability	☒ Yes ☐ No If “Yes”, specify applicable type of Disability: a. Locomotor Disability: Leprosy Cured Person, Dwarfism, Muscular Dystrophy and Acid Attack Victims b. Visual Impairment: Low Vision												
14.	How participation of women will be encouraged?	Participation by women can be ensured through Government Schemes. Occasionally, exclusive batches for women would be run for the proposed courses. Funding is available for women’s participation under other schemes launched by the Government from time to time.												
15.	Other Indian languages in which the Micro Credential will be implemented.	Qualification file is available in English and Hindi languages.												
16.	Is similar Micro Credentials available on NQR-if yes, justification for this qualification	☐ Yes ☒ No URLs of similar Qualifications:												
17.	Name and Contact Details Submitting / Awarding Body SPOC	Name: Dr. Vimala Mathew, Scientist E Email: vimala@nielit.gov.in Contact No.: 0495-228 7266 Website: https://nielit.gov.in/calicut/index.php												
18.	NSQC Approval Date: 18.02.2025	19. Validity Duration: 3 Years 20. Next Review Date: 18.02.2028												

Section 2: Training Related

1.	Trainer's Qualification and experience in the relevant sector (in years) <i>(as per requirement and NCVET guidelines)</i>	B. Tech in Computer Science/ IT/ Electronics and Communication/ allied branches Or MCA Or BCA Or A- Level (IT) with 1 year of Experience in training.
2.	Master Trainer's Qualification and experience in the relevant sector (in years) <i>(as per requirement and NCVET guidelines)</i>	B. Tech in Computer Science/ IT/ Electronics and Communication/ allied branches Or MCA Or BCA Or A- Level (IT) with 2 year of Experience in training.
3.	Tools and Equipment Required for the Training	☒ Yes ☐ No <i>(If "Yes", details to be provided in Annexure-II)</i>

Section 3: Assessment Related

1.	Assessor's Qualification and experience in relevant sector (in years) <i>(as per requirements and NCVET guidelines)</i>	B. Tech in Computer Science/ IT/ Electronics and Communication/ allied branches Or MCA Or BCA Or A- Level (IT) with 2 year of Experience in training.
2.	Proctor's Qualification and experience in relevant sector (in years) <i>(as per requirements and NCVET guidelines)</i>	The assessor carries out theory online assessments through the remote proctoring methodology. Theory examination would be conducted online and the paper comprise of MCQ. Conduct of assessment is through trained proctors. Once the test begins, remote proctors have full access to the candidate's video feeds and computer screens. Proctors authenticate the candidate based on registration details, pre-test image captured and I- card in possession of the candidate. Proctors can chat with candidates or give warnings to candidates. Proctors can also take screenshots, terminate a specific user's test session, or re-authenticate candidates based on video feeds.
3.	Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years) <i>(as per requirements and NCVET guidelines)</i>	External Examiners/ Observers (Subject matter experts) are deployed including NIELIT scientific officers who are subject experts for evaluation of Practical examination/ internal assessment / Project/ Presentation/ assignment and Major Project (if applicable). Qualification is generally B.Tech.
4.	Assessment Mode <i>(Specify the assessment mode)</i>	Online for Theory. Online/ Offline/ Blended for other assessment components depending on the region where the assessment is conducted
5.	Tools and Equipment Required for Assessment	☐ Same as for training ☐ Yes ☒ No <i>(details to be provided in Annexure-if it is different for Assessment)</i>

Section 4: Evidence of the Need for the Micro Credential*Provide Annexure/Supporting documents name.*

1.	Government /Industry initiatives/ requirement (Yes/No): Yes
2.	Number of Industry validation provided: The QF/NOS/Micro credentials are offered through IndiaAi Labs for Empowering the youth by imparting training in Emerging AI Technologies under India AI Future Skills pillar of IndiaAI Mission.
3.	Estimated number of people to be trained: 500

Section 5: Annexure & Supporting Documents Check List*Specify Annexure Name / Supporting document file name*

1.	Annexure: NCrf/NSQF level justification based on NCrf Level/NSQF descriptors <i>(Mandatory)</i>	Annexure I: Evidence of Level
2.	Annexure: Learning Outcomes and Assessment Criteria <i>(Mandatory)</i>	Annexure II: Assessment Criteria
3.	Annexure: Assessment Strategy <i>(Mandatory)</i>	Annexure III: Assessment Strategy
4.	Annexure: List of tools and equipment relevant for qualification <i>(Mandatory – Except in case of online course)</i>	Annexure IV: Tools & Equipment
5.	Annexure: Industry Validation	Annexure-V: Industry Validation
6.	Annexure: Training Details	Annexure VI: Training Details
7.	Annexure: Blended Learning <i>(Mandatory in case selected mode of delivery is “Blended Learning”)</i>	Annexure VII: Blended Learning
8.	Annexure: Acronym and Glossary <i>(Optional)</i>	Annexure VIII: Acronym & Glossary

Annexure-I: Evidence of Level

NCrF/NSQF Level Descriptors	Key requirements of the job role/ outcome of the qualification	How the job role/ outcomes relate to the NCrF/NSQF level descriptor	NCrF/NSQF Level
Professional Theoretical Knowledge/Processes	- Proficiency in utilizing industry-standard open-source annotation tools for Education data, ensuring accuracy and quality through validation and quality control practices. - Experience in planning and executing real-world Education data annotation projects, demonstrating the ability to work collaboratively within a team to achieve shared objectives.	- A strong foundation in data annotation methods (e.g., Named Entity Recognition, bounding boxes, and text classification) and familiarity with annotation tools prepares individuals to execute tasks efficiently and maintain industry standards. - Theoretical knowledge of different types of Education -specific data and their significance ensures annotators are well-equipped to identify and handle diverse datasets accurately. - Theoretical insights into ethical considerations and data privacy regulations are critical for maintaining compliance and ensuring the integrity of Education data annotation practices.	3.5
Professional and Technical Skills/ Expertise/ Professional Knowledge	- Ability to effectively use industry-standard open-source annotation tools. The annotator should be able to navigate these tools efficiently to complete annotation tasks while maintaining high quality standards. - Familiar with best practices for ensuring data security during the annotation process, including anonymizing sensitive information and implementing access controls.	- Proficiency in using industry-standard open-source annotation tools is essential for efficiently completing annotation tasks. - The ability to navigate these tools ensures that annotators can manage large volumes of Education data effectively, contributing to enhanced Education intelligence and decision-making processes	3.5
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	- Exhibit a deep understanding of data privacy laws and ethical standards, critical for handling sensitive Education data and ensuring compliance with regulations such as HIPAA or GDPR. - Showcase the ability to plan, execute, and	- Proficiency in Education -specific annotation tools, techniques, and standards equips candidates with skills that are immediately applicable in professional settings, enhancing job readiness. - Understanding of data privacy laws and ethical considerations builds a foundation for trust and	3.5

	document data annotation projects, collaborate effectively in team settings, and adapt to real-world challenges, preparing candidates for roles in industry or entrepreneurial ventures in data services.	compliance, vital for roles in industries handling sensitive Education data or for entrepreneurs offering data annotation services.	
Broad Learning Outcomes/Core Skill	• Ability to identify, classify, and annotate Education-specific data, including crop images, soil health data, and weather patterns. • Understanding and application of ethical considerations, ensuring compliance with data privacy regulations specific to Education data • Demonstrate the ability to plan, manage, and execute Education data annotation projects effectively within a team environment.	• These outcomes align with the core skill of analytical reasoning by enabling individuals to interpret, classify, and process diverse types of Education -specific data. Proficiency in using annotation tools enhances the ability to work with real-world datasets, making data actionable and impactful for agricultural innovations. • Understanding data privacy and ethical considerations ensures alignment with regulations and builds a foundational core skill of responsibility and integrity.	3.5
Responsibility	• Candidates must demonstrate a commitment to safeguarding sensitive Education data by adhering to regulatory guidelines and ethical principles in data annotation projects. • Professionals are expected to ensure accuracy, consistency, and reliability in annotated datasets, taking responsibility for quality control and validation processes. • Candidates should exhibit responsibility in planning, managing, and documenting Education -specific data annotation projects while meeting deadlines and incorporating feedback for continuous improvement.	• The outcomes emphasize the importance of maintaining strict confidentiality and complying with Education -specific data privacy regulations, showcasing a candidate's responsibility in handling sensitive information. • By ensuring the accuracy and consistency of annotated Education datasets, professionals demonstrate a high level of accountability in delivering reliable data outputs essential for Education applications. • The ability to plan, execute, and document data annotation projects, while collaborating effectively with team members and addressing feedback, highlights the candidate's responsibility in contributing to successful project outcomes.	3.5

Annexure-II: Learning Outcomes and Assessment Criteria

Detailed learning outcomes and assessment criteria for the qualification are as follows:

Assessment Criteria for Performance Criteria	Learning Outcomes	Theory Marks	Practical Marks
Introduction to the Education and the role of Data Annotator in Education	• Understand the importance, scope, and types of education-specific data used in digital learning and educational systems. • Explain how education data supports teaching strategies, personalized learning, and institutional decision-making. • Identify the role, responsibilities, and ethical obligations of data annotators in education, including data privacy considerations.	25	25
Techniques, Tools, and Methods of Data Annotation specific to Education	• Apply appropriate data annotation techniques such as NER, text classification, bounding boxes, polygons, and speech-to-text on education datasets. • Use industry-relevant open-source data annotation tools effectively for education-specific data. • Follow best practices, ethical standards, and quality control measures to ensure accuracy and consistency during annotation. • Plan and execute an education-focused data annotation project using real-world or simulated datasets.		
Total Marks		25	25
Grand Total		50	

Annexure-III: Assessment Strategy

This section includes the processes involved in identifying, gathering, and interpreting information to evaluate the Candidate on the required competencies of the program.

Assessment of the qualification evaluates candidates to ascertain that they can integrate knowledge, skills, and values for carrying out relevant tasks as per the defined learning outcomes and assessment criteria.

The underlying principle of assessment is fairness and transparency. The evidence of the outcomes and assessment criteria. competence acquired by the candidate can be obtained by conducting Theory and Practical examinations.

About Examination Pattern:

1. The question papers for the theory exams are set by the Examination wing (assessor) of NIELIT HQS.
2. The assessor assigns the roll number.
3. The assessor carries out theory assessments. Theory examination will be conducted online, and the paper will comprise MCQ.
4. The assessor carries out practical assessments. A practical examination would be conducted 100% offline.
5. The pass percentage would be 50% marks.
6. The examination will be conducted in English language only.

Quality assurance activities: A pool of questions is created by a subject matter expert and moderated by other SMEs. Test rules are set beforehand. According to the syllabus, a random set of questions appears, which may differ from candidate to candidate. Confidentiality and impartiality are maintained during all the examination and evaluation processes.

Annexure-IV: Tools and Equipment (lab set-up)

List of Tools and Equipment

Batch Size: 30

S. No.	Tool / Equipment Name	Specification	Quantity for specified Batch size
1	Classroom	1 (30 Sq.m)	30
2	Student Chair	Standard	30
3	Student Table	Standard	30
4	Desktop computer with accessories	Installed with: • Open-source Annotation Software. • Open-source Computer Vision Tools. • Open-source NLP Tools • Documentation tools (Adobe, MS-Word). • Documentation tools such as Adobe and MS-Word	30
5	LCD Projector	-	1
6	Deskjet printer	A4	1

Classroom Aids:

The aids required to conduct sessions in the classroom are:

1. LCD Projector/Smart Board
2. Pin-up Board
3. White Board, Markers, Chart paper and sketch pens

Annexure V: Industry Validations Summary

Course is to be offered through IndiaAI Labs for Empowering the youth by imparting training in Emerging AI Technologies under India AI Future Skills pillar of IndiaAI Mission.

Annexure VI: Training Details**Training Projections:**

Year	Estimated Training# of Total Candidates	Estimated training # of Women	Estimated training # of people with Disability
2025-26	100	50	10
2026-27	200	70	15
2027-28	200	70	15

Annexure-VII: Blended Learning

Blended Learning Estimated Ratio & Recommended Tools: **NA**

Annexure VIII: Acronyms & Glossary**Acronyms:**

Acronym	Description
AA	Assessment Agency
AB	Awarding Body
NCrF	National Credit Framework
NOS	National Occupational Standard(s)
NQR	National Qualification Register
NSQF	National Skills Qualifications Framework

Glossary:

Term	Description
National Occupational Standards (NOS)	NOS define the measurable performance outcomes required from an individual engaged in a particular task. They list down what an individual performing that task should know and also do.
Qualification	A formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards.
Qualification File	A Qualification File is a template designed to capture necessary information of a Qualification from the perspective of NSQF compliance. The Qualification File will be normally submitted by the awarding body for the qualification.
Sector	A grouping of professional activities on the basis of their main economic function, product, service or technology.