CIMEA's Digital Transformation Pathway: a Journey of Innovation

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Digital Transformation at CIMEA:

A Journey of Innovation

CIMEA, the Information Centre on Academic Mobility and Equivalence, has undergone a profound digital transformation since 2018, revolutionizing credential evaluation processes for international academic qualifications. This transformation has not only enhanced operational efficiency but has fundamentally reshaped how the organization functions.

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The Evolution of the Species

Up to 1970s

The Prehistoric Era

The Ignorance of Recognition

International Student Mobility is still limited. The concept of recognition of qualifications is almost absent.

No established agreements between countries regarding academic or professional credentials

1980s- early 1990s

The Ancient Age

Analog Bureaucracy

•Recognition of qualifications begins to emerge, but it is heavily reliant on paper-based processes and slow, ***demanding bureaucratic procedures*** such as ***notarization*** and ***legalization***. The process is time-consuming, inconsistent, and vulnerable to forgery.

•***Bilateral agreements*** between countries form the primary framework for recognition. Mobility is slow, and cross-border recognition is cumbersome

Mid-late 1990s- Early 2000s

The Medieval Era

Digital Introduction

•The introduction of personal computers marks a significant shift. PCs are used for limited administrative purposes, like basic communication or maintaining rudimentary databases. Despite this, ***paper-based processes and traditional bureaucratic procedures*** remain dominant.

•The ***1997 Lisbon Recognition Convention*** introduces groundbreaking principles for mutual recognition, paving the way for modern approaches. Recognition starts becoming more accessible but remains tied to analog methods.

Late 2000s-2010s

The Digital Renaissance

Digital Transition

•***Widespread adoption of technology*** revolutionizes communication. Paper use is reduced, but it still dominates verification processes. ***Emails*** become the norm for communication between institutions and authorities, but recognition procedures often require ***physical submissions*** or reliance on ***paper-based qualifications***. A full transition to digital methods is yet to be achieved.

•Further ***regional recognition conventions*** are adopted, building on the LRC.

Late 2010s-2020s

The Modern Era

Digital Transformation

•Profound shift brought about by ***digital transformation***. Institutions, countries, and stakeholders embrace ***digitally verifiable documents, secure digital sharing, and comprehensive databases***, fostering greater global collaboration. The rise of technologies such as ***blockchain, and automated systems***—especially during pivotal moments like the COVID-19 pandemic—has made recognition procedures faster, more secure, and globally accessible.

•The ***2019 Global Recognition Convention*** is adopted. Automatic Recognition is being implemented in the EHEA.

2025 onwards

The Future

Human-AI Collaboration

The future of qualification recognition may lie in the ***collaboration between humans and AI***. Automated systems assist credential evaluators, reducing human error, increasing efficiency, and contributing to fair and faster recognition. ***AI-powered tools*** can support in ***detecting fraud*** and ***verify qualifications*** seamlessly.

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Traditional Credential Evaluation

A highly manual, decentralized system

1. **Long processing times due to manual workflows**
   Online form, email notification, manually signed and scanned
2. **Inconsistency across evaluations from lack of standardized processes**
3. **Inefficient data storage and retrieval, limiting analysis and process improvement**
4. **No scalability, failing to meet growing demand for qualification recognition**

Goals for CIMEA's Digital Transformation

Delineating the objectives driving the digitalization of credential evaluation workflows is paramount. This entails defining specific goals that encompass both the center's overarching mission and the digital transformation agenda. By establishing these objectives, the center sets a clear direction for enhancing efficiency, accuracy, and accessibility within the evaluation process. These goals serve as the cornerstone for aligning technological initiatives with the center's strategic vision, ultimately ensuring the successful integration of digital solutions into its operations.

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Quality by Design

Holistic Approach

- Comprehensive Workflow Redesign: Reimagined the entire evaluation process as an interconnected system, ensuring alignment .
- Sequential Implementation: step by step progression
- Rigorous End-to-End Testing: Thorough testing of the entire workflow to ensure a seamless user experience.

Participatory Approach

- Hands-On Analysis: Leveraged expertise of senior evaluators across diverse regions.
- Geographical Coverage: Ensured insights from varied educational systems and credential peculiarities.

Service Design

- User Research: Delved into the needs, preferences, and challenges of key stakeholders.
- Journey Mapping: Visualized user interactions to pinpoint areas for enhancement and optimization.

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CIMEA Digital Transformation Pathway

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2019 DIPLOME 1.0
First digital platform for blockchain-based statement service

2022 WIKI
Internal information management system

2023 ARDI
Automatic Recognition Database - Italia

2024 DIPLOME 2.0
Renewed digital platform for blockchain-based statement service

2025 DTU
Digital Transformation Unit

2025 DIPLOMECHAIN
New blockchain infrastructure owned by CIMEA

2018

2020

2020

2022

2023

Statements Requests			
Information Management	Initial restructuring of information architecture	Consolidation of information architecture	Enhancement of data models and analysis capability
Workflow Management	Input and output phases completely digitalized Throughput phase partially digitalized	Throughput phase further digitalized	Enhancement of user-centricity and complete digitalization of the throughput


Innovation
INFORMATION ARCHITECTURE
How we do it

WIKI

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Innovation

Rationalised reliable resources organised by country according to a uniform index.

The introductions of the WIKI as a **new information management system** aims to improve our internal system affecting the following macro areas related to the collection and storage of information, resources and data.

Time-saving technological solution, maintaining high standards of quality.

Selection, rationalisation and re-organization of stored and new resources.

Homogeneous and effective training.

CIMEAWIKI

NAVIGATION

Home

Countries

Projects

Shortcuts

Institutional communication

Events

Recent Changes

Draft

TOOLS

New article

Image/Documents

COUNTRY NAVIGATION

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

AMERICA

Anguilla
Antigua and Barbuda
Argentina
Aruba
Bahamas
Barbados
Belize
Bermuda
Bolivia
Brasil
British Virgin Islands
Canada
Cayman Islands
Chile
Colombia
Costa Rica
Cuba
Curaçao, St. Maarten and the BES Islands
Dominica
Dominican Republic
Ecuador
El Salvador
Falkland Islands
French Guiana
Grenada
Guadeloupe
Guatemala
Guyana
Haiti
Honduras
Jamaica
Martinique
Montserrat
Mexico
Nicaragua
Panamá
Paraguay
Perú
Puerto Rico
Saint Kitts and Nevis
Saint Pierre and Miquelon
Saint Vincent and The Grenadines
St. Lucia
Suriname
Trinidad and Tobago
Turks and Caicos Islands
United States
Uruguay
Venezuela

EUROPE

Albania
Andorra
Austria
Azerbaijan
Belarus
Belgium
Bosnia and Herzegovina
Bulgaria
Croatia
Cyprus
Czech Republic
Denmark
Estonia
Faroe Islands
Finland
France
Germany
Germany def
Gibraltar
Greece
Greenland
Holy See
Hungary
Iceland
Ireland
Isle of Man
Italy
Kosovo
Latvia
Liechtenstein
Lithuania
Luxembourg
Malta
Moldova
Monaco
Montenegro
Netherlands (The)
North Macedonia
Norway
Poland
Portugal
Romania
Russian Federation
San Marino
Serbia
Slovakia
Slovenia
Spain
Sweden
Switzerland
Turkey
Ukraine
United Kingdom

AFRICA

Algeria
Angola
Benin
Botswana
Burkina Faso
Burundi
Cameroon
Cape Verde
Central African Republic
Chad
Comoros
Democratic Republic of the Congo
Djibouti
Egypt
Equatorial Guinea
Eritrea
eSwatini
Ethiopia
Gabon
Gambia
Ghana
Guinea
Guinea Bissau
Ivory Coast
Kenya
Lesotho
Liberia
Libya
Madagascar
Malawi
Mali
Mauritania
Mauritius
Mayotte
Morocco
Mozambique
Namibia
Niger
Nigeria
Republic of Congo
Rwanda
Réunion
Saint Helena, Ascension and Tristan da Cunha
Senegal
Seychelles
Sierra Leone
Somalia
South Africa
South Sudan
Sudan
São Tomé and Príncipe
Tanzania
Togo
Tunisia
Uganda
Zambia
Zimbabwe

ASIA

Afghanistan
Armenia
Bahrain
Bangladesh
Bhutan
British Indian Ocean Territory
Brunei
Cambodia
China
Georgia
Hong Kong
India
Indonesia
Iran
Iraq
Israel
Japan
Jordan
Kazakhstan
Kuwait
Kyrgyzstan
Laos
Lebanon
Macau
Malaysia
Maldives
Mongolia
Myanmar
Nepal
Oman
Pakistan
Palestine
Philippines
Qatar
Saudi Arabia
Singapore
South Korea
Sri Lanka
Syria
Taiwan
Tajikistan
Thailand
Timor Leste
Turkmenistan
United Arab Emirates
Uzbekistan
Vietnam
Yemen

OCEANIA

American Samoa
Australia
Cook Islands
Fiji
French Polynesia
Guam
Kiribati
Marshall Islands
Micronesia (Federated States of)
Nauru
New Caledonia
New Zealand
Niue
Norfolk Island
Northern Mariana Islands (Commonwealth of the)
Palau
Papua New Guinea
Samoa
Solomon Islands
Tokelau
Tonga
Tuvalu
Vanuatu
Wallis and Futuna

Innovation

POLICY IMPLEMENTATION

How we do it

Innovation

Automatic Recognition Database Italia (ARDI)

55 Countries

442 Evaluations of Correspondence

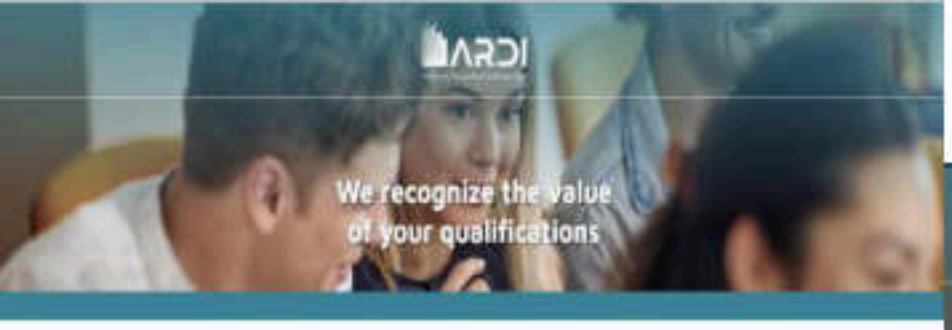
331 Higher Education Qualifications

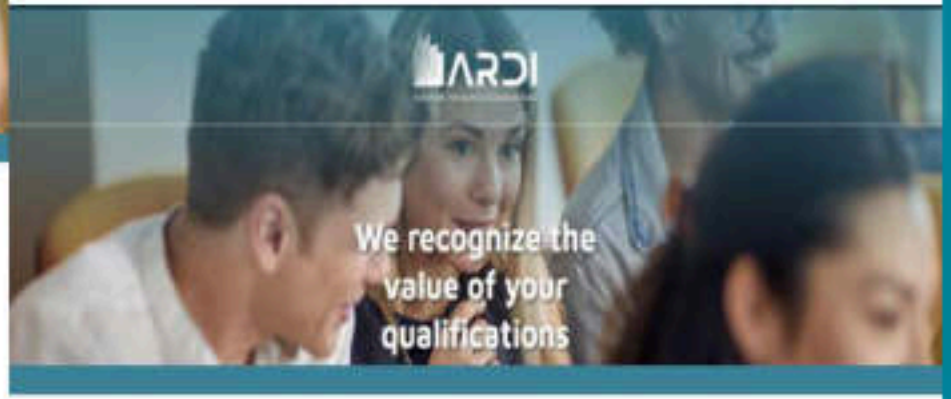
111 School Qualifications

Since its launch on October 10th 2023, more than **54.000 Statements of Correspondence** have already been downloaded proving ARDI's significant role in supporting the implementation of Automatic Recognition in Italy to the benefit of both international students and Italian HEIs.

QUALIFICATION SEARCH › **EVALUATION** › **STATEMENT OF CORRESPONDENCE**

SEARCH


ARDI
We recognize the value of your qualifications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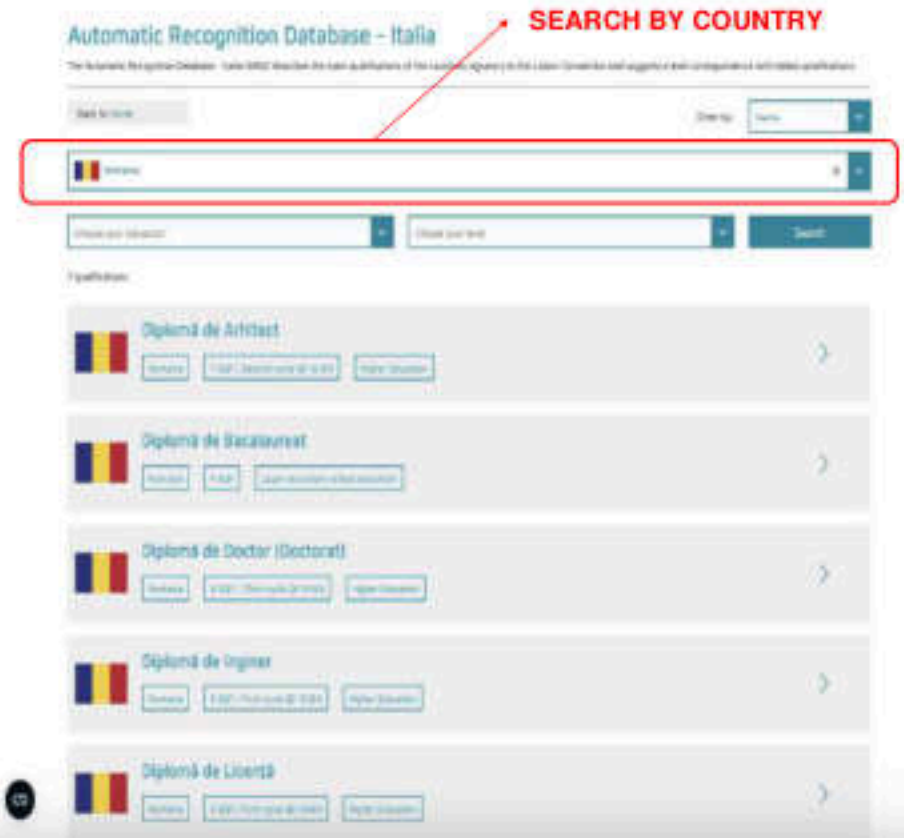
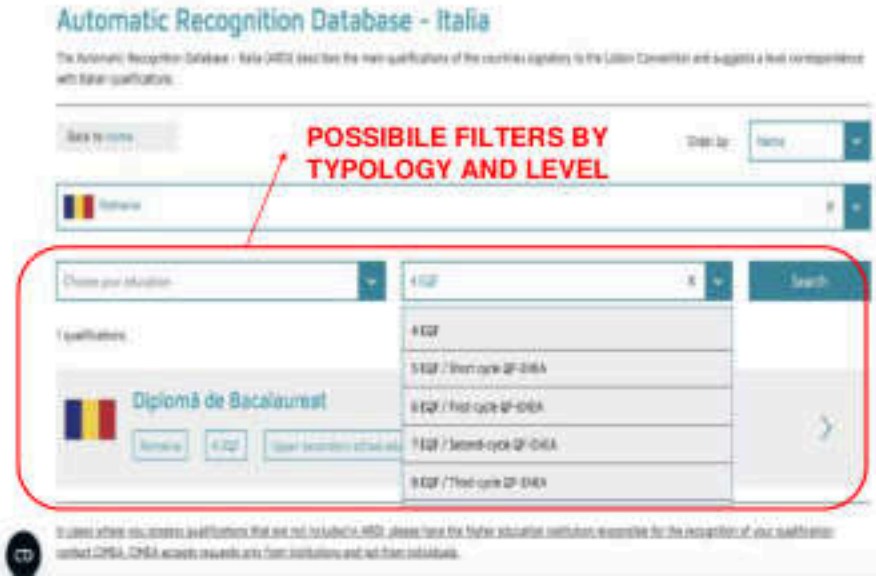

Automatic Recognition Database - Italia
SEARCH BY COUNTRY
Diplomă de Artistet
Diplomă de Bacalaureat
Diplomă de Doctor (Doctorat)
Diplomă de Inginer
Diplomă de Licență


Automatic Recognition Database - Italia
POSSIBILE FILTERS BY TYPOLOGY AND LEVEL
Diplomă de Bacalaureat

Innovation

PROCESS REENGINEERING

How we do it

A new management system: DiploMe

Innovation

Unique place for CIMEA staff

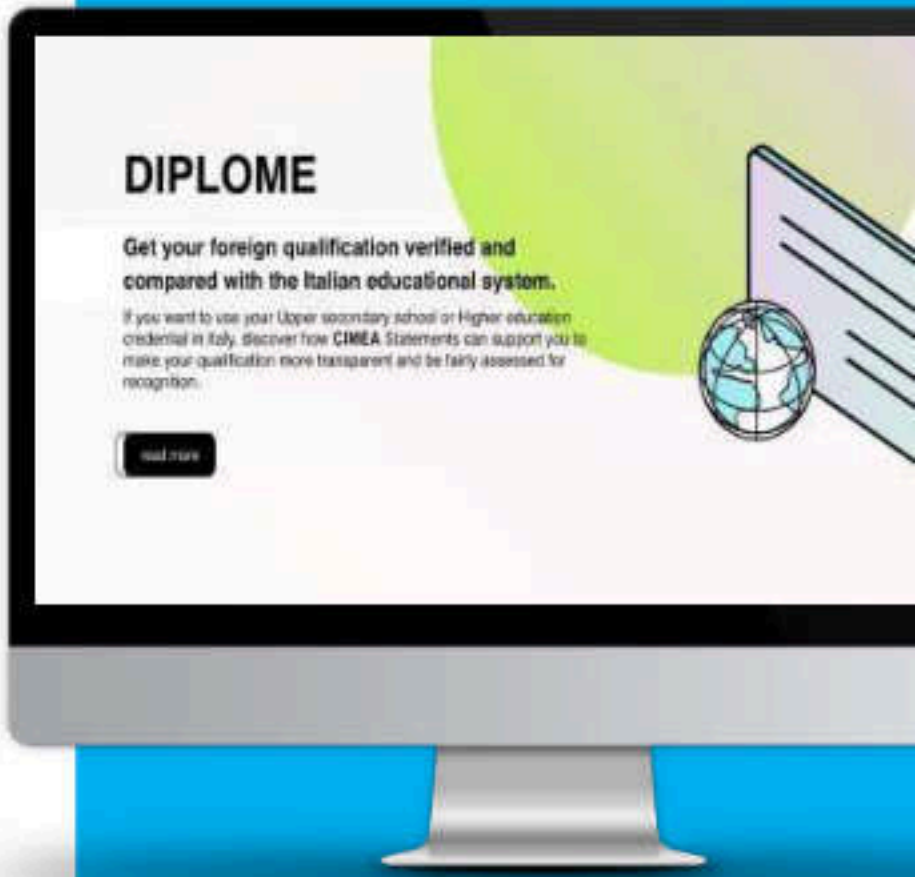
Interaction between Credential Evaluators and Scan Department, specific section for the verification of the authenticity, specific section for the evaluation policies ...

Focus on the **interoperability** between **ARDI, WIKI, DEQAR** and **WHED.**

Closer connection with HEIs

A restricted area has been created exclusively for HEIs, to monitor the application status of their prospective students and download the Statements when they are available.

CIMEA diplome



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What's Next:

AI

Digital Transformation of Education: Regulatory Framework

AI Act - European Union

UNESCO Six pillars for the digital transformation of education

European Commission Digital Education Action Plan (2021-2027)

UNESCO frameworks for AI in Education and Research

Council of Europe Framework Convention on Artificial Intelligence and Human Rights,Democracy and Rule of Law

UN Global Digital Compact

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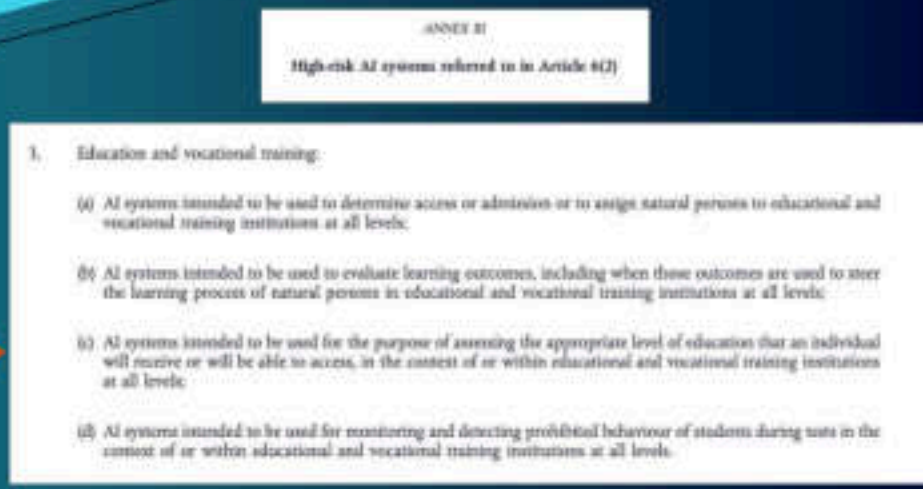
AI Act – European Union Higher Risk, Stricter Rules

Risk Based Approach

The AI act addresses the risks associated with specific uses of AI, categorising them into four levels of risk and establishing different rules accordingly:

- Minimal or no risks: not regulated or affected by the EU's AI act
- Limited risks: transparency obligations
- High risks: must meet strict requirements and obligations to gain access to the EU market.
- Unacceptable risks: AI systems that pose a threat to people's safety, rights or livelihoods are banned from use in the EU.



ANNEX III

High-risk AI systems referred to in Article 6(2)

1. Education and vocational training:

(a) AI systems intended to be used to determine access or admission or to assign natural persons to educational and vocational training institutions at all levels;

(b) AI systems intended to be used to evaluate learning outcomes, including when those outcomes are used to steer the learning process of natural persons in educational and vocational training institutions at all levels;

(c) AI systems intended to be used for the purpose of assessing the appropriate level of education that an individual will receive or will be able to access, in the context of or within educational and vocational training institutions at all levels;

(d) AI systems intended to be used for monitoring and detecting prohibited behaviour of students during tests in the context of or within educational and vocational training institutions at all levels.

Source: https://www.consilium.europa.eu/en/policies/artificial-intelligence/

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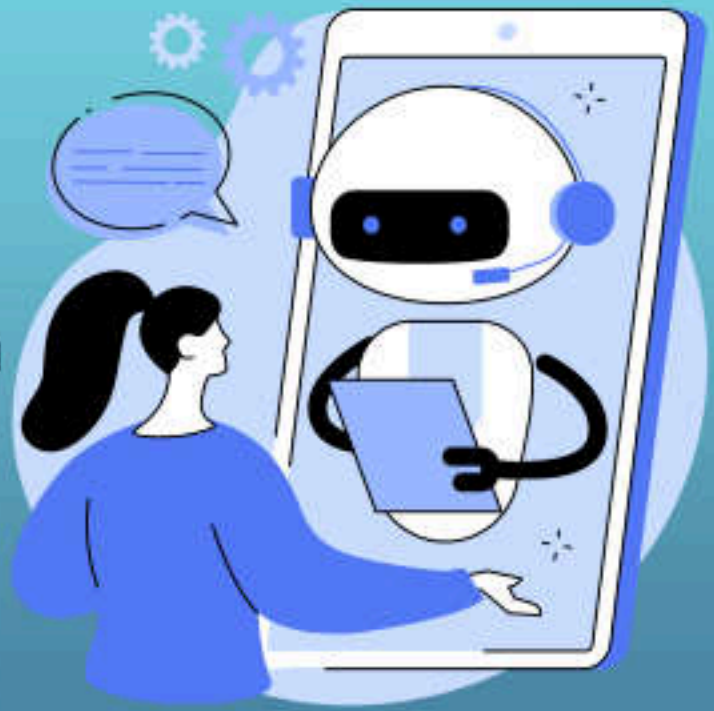
How AI supports Qualification Recognition?

IALAB - Laboratorio de Inteligencia Artificial,
Universidad de Buenos Aires, Argentina
University of Pisa, Italy

1. Qualification Classification Suggestions
2. Verification of authenticity & fraud detection
3. Completitiveness of the requests submitted and automated User notifications
4. Case assignment and predictive demand modeling
5. Language support and customer service enhancement



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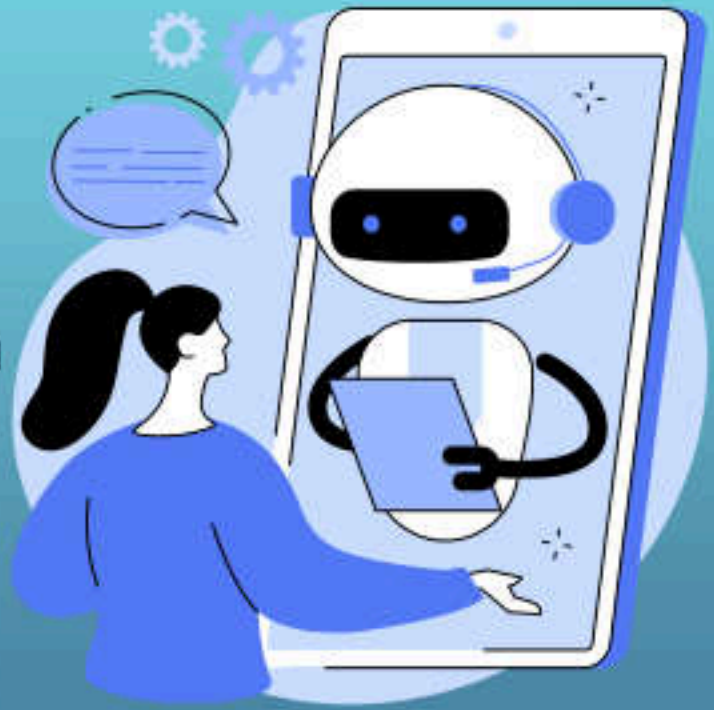

Fraud Detection Through AI

Document Analysis

AI scans submitted documents for potential anomalies

Pattern Recognition

System compares with official databases to identify discrepancies

Alert Generation

Suspicious elements flagged for human review

Human Oversight

Final assessment made by credential evaluators

Applicant Experience Enhancement

- Rules-Based Chatbot
- Machine Learning Integration
- Continuous Improvement

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Thank You for Your Attention!

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