

BSC Connects Tech for Impact Awards 2026 Projecte Aina



Challenges
proposed by



**Aigües de
Barcelona**

BACKGROUND



Aigües de Barcelona is the public company responsible for supplying and distributing drinking water to Barcelona and surrounding municipalities in Spain. Founded to ensure reliable water access to the city's population, the company manages the entire water cycle, from treatment to distribution through an extensive network of pipes.

The company sources water primarily from the Llobregat and Ter rivers, as well as from underground aquifers. With a commitment to sustainability, Aigües de Barcelona continuously invests in modernizing its infrastructure and reducing water losses in the distribution network, which currently exceeds 2,500 kilometers of pipes throughout the metropolitan area.

AREAS OF INTEREST

ARTIFICIAL INTELLIGENCE

SUSTAINABILITY

DATA & ANALYTICS

CHALLENGE 1

TITLE

Smart Shadow and Tourist Density Detection System for Hydration and Information Points

DESCRIPTION

Develop an innovative technology or service that automatically identifies the most crowded tourist zones in Barcelona with insufficient shade coverage, enabling the strategic placement of public hydration points and portable tourist information offices.

This challenge aims to address the growing need for visitor safety and comfort in urban tourism hotspots by combining real-time data analytics, satellite imagery, and IoT sensors to map areas with high tourist concentration and direct sun exposure.

The system would utilize artificial intelligence to analyze mobility patterns from social media and mobile data, satellite thermal imaging to detect shadow availability, and temperature sensors to identify heat risk zones.



**Aigües de
Barcelona**



CHALLENGE 1

DESCRIPTION

By implementing this solution, Barcelona can proactively deploy portable hydration stations and information kiosks in strategic locations where tourists are most vulnerable to heat-related issues, while simultaneously improving the overall visitor experience.

This initiative would not only prevent heat-related health emergencies but also optimize resource allocation, reduce operational costs, and demonstrate Barcelona's commitment to sustainable and inclusive urban tourism management.

The technology would enable Aigües de Barcelona and municipal authorities to make data-driven decisions about infrastructure placement, ensuring that essential services reach tourists precisely where and when they need them most.

KEY WORDS

AI · data



**Aigües de
Barcelona**



CHALLENGE 2

TITLE

How can we connect Aigües de Barcelona's assets with citizens in a way that generates tangible value for everyday urban life?

DESCRIPTION

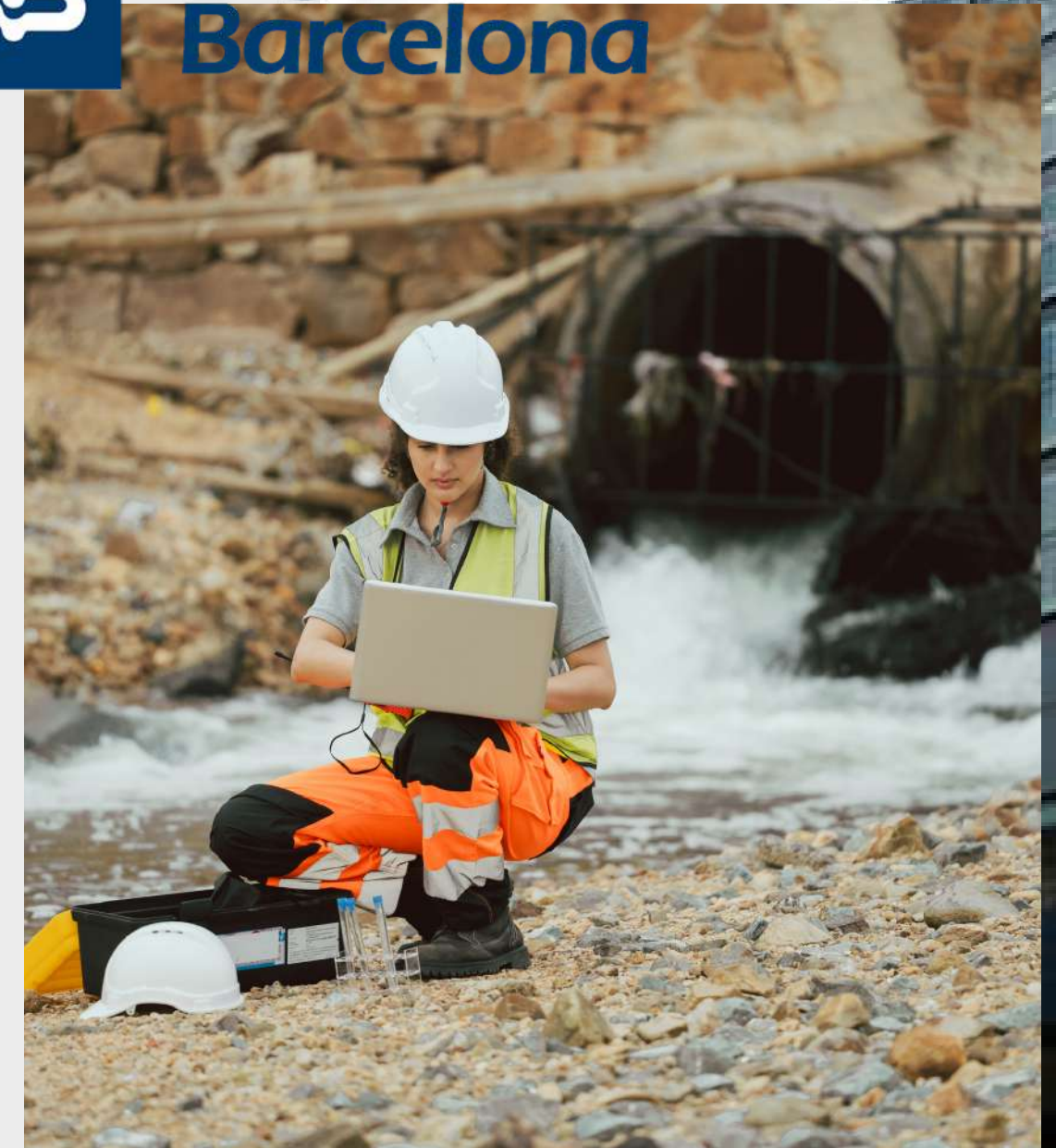
These assets, understood in a broad sense, include physical infrastructure (networks, plants, reservoirs), data, digital systems and technical knowledge. We are looking for ideas, technologies and solutions that make these assets visible, accessible and meaningful to people, turning water into a driver of innovation and well-being in the city.

Innovation can come from many angles:

- Digital tools and artificial intelligence that visualise or optimise water use in the city.
- Circular-economy initiatives that give new life to water resources or by-products.
- Smart technologies or interactive experiences that make water infrastructure part of the city's identity.
- Collaborative models that connect water management with mobility, energy or social inclusion.



**Aigües de
Barcelona**



CHALLENGE 2

OBJECTIVES

The objective is to turn science and technology into visible change in the city, so that citizens feel how innovation in water management directly improves their daily lives.

Drawing on data, digital intelligence and the infrastructure of the urban water cycle, our aim is to create solutions that close the gap between complex systems and human experience.

The objective is to create new forms of social, environmental and economic value, strengthening the connection between Aigües de Barcelona and the people it serves, and making water a visible, shared and celebrated element of urban life.

KEY WORDS

Water data · water-cycle management · urban innovation · sustainable cities · circular economy · social value · data-driven management · community well-being · urban resilience · water infrastructure



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BACKGROUND

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science meets business



AstraZeneca is a global, science-led biopharmaceutical company operating in Oncology, Biopharmaceuticals (CVRM and Respiratory & Immunology) and Rare Disease (Alexion). Our Global Hub in Barcelona hosts R&D, Clinical Operations and Commercial Excellence teams, together with the Innovation team that connects AstraZeneca to the Catalan and Spanish deep-tech, research and healthcare ecosystem.

AREAS OF INTEREST

SUPERCOMPUTING / HPC

DATA & ANALYTICS

ARTIFICIAL INTELLIGENCE

LANGUAGE TECH / AINA

Aina

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CHALLENGE 1



TITLE Shortening the diagnostic odyssey with AI on real-world clinical data

WHY IT MATTERS Rare-disease patients wait 5–7 years for a correct diagnosis; in prevalent diseases many are identified only after an avoidable clinical event. The signal is usually already in the health system – scattered across notes, labs, imaging and prescriptions – but nobody reads it as a whole.

- WHAT WE ARE LOOKING FOR**
- Phenotyping and pattern detection across structured and unstructured EHR data; clinical text in Spanish and Catalan is an advantage, not an obstacle.
 - Predictive and prognostic biomarkers from real-world, multimodal or multi-omic data, including response-to-treatment prediction.
 - Federated, privacy-preserving architectures that keep patient data inside the hospital, ready for the European Health Data Space.
 - Explainable, confidence-ranked output embedded in the clinician's existing workflow – not one more dashboard.



This challenge focuses on language technologies; the solution you propose must incorporate the resources from the Aina project. Please find all of the Aina's resources linked here and on the website.

CHALLENGE 1

WHAT GOOD LOOKS LIKE

Validation on a retrospective cohort reporting positive predictive value and false-alert burden, plus a credible plan for a prospective pilot at one hospital site.

KEY WORDS

AI/ML · clinical NLP · federated learning · real-world data · rare disease · EHDS

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ALEXION®
AstraZeneca Rare Disease

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CHALLENGE 2



TITLE In-silico trial design: AI and HPC for faster, leaner, more representative trials

WHY IT MATTERS Protocols are still designed largely on expert judgement and precedent, producing over-restrictive eligibility, unrepresentative cohorts, avoidable amendments and sites that never recruit. Compute and data now exist to stress-test a protocol before it opens.

- WHAT WE ARE LOOKING FOR**
- Simulation of eligibility criteria against real-world populations to quantify recruitment feasibility, diversity and screen-failure risk before lock.
 - Digital twins and synthetic or external control arms to size studies and reduce unnecessary placebo exposure.
 - AI and HPC for target identification, molecule design, dose selection and early safety-signal detection.
 - Auto-categorisation of quality events, early trend detection and LLM-based mapping of internal SOPs to evolving regulation.

CHALLENGE 2



WHAT GOOD LOOKS LIKE

A demonstration on public or synthetic data quantifying impact on one hard metric – screen–failure rate, time to first patient in, amendment risk or study size.

KEY WORDS

HPC/MareNostrum 5 • generative AI • digital twins • synthetic data • simulation • LLMs

CHALLENGE 3



TITLE Adherence that adapts: intelligent multilingual companions for complex therapies

WHY IT MATTERS Complex regimens – injectables, inhaled therapies, lifelong rare-disease treatment – fail for human reasons: fear of side effects, regimen fatigue, caregiver burden, low health literacy. Around half of patients on long-term therapy do not take it as prescribed; generic reminders do not fix that.

**WHAT WE ARE
LOOKING FOR**

- Early prediction of individual non-adherence and discontinuation risk from routine or passively collected signals.
- Adaptive interventions grounded in behavioural science, tailored to the patient's context and moment in the journey.
- Agents for patients and caregivers answering strictly from approved, up-to-date sources – retrieval-grounded, traceable, auditable — in Spanish, Catalan and beyond.
- Scalable, easily updatable education for patients and HCPs, usable on low-end devices and by low-digital-literacy users.



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CHALLENGE 3

WHAT GOOD LOOKS LIKE

A measurable improvement in persistence or patient-reported outcomes in a defined cohort, on an architecture that is GDPR- and AI-Act-ready from day one.

KEY WORDS

conversational AI · RAG · language tech/Aina · behavioural science · wearables

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AstraZeneca Rare Disease

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CHALLENGE 4

ALEXION[®]
AstraZeneca Rare Disease

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TITLE

Life beyond the prescription: equitable support networks for rare-disease quality of life

WHY IT MATTERS

For rare-disease families the hardest part often begins after diagnosis: isolation, mental-health burden, caregiver exhaustion, and access to expertise that depends on where you happen to live. Little of this is addressed by the medicine itself.

WHAT WE ARE LOOKING FOR

- Privacy-preserving matching of patients and caregivers to peer networks, patient organisations and the right expertise, across regions and languages.
- Platforms enabling multidisciplinary virtual boards and structured second opinions where no local centre of expertise exists.
- Continuous, low-burden capture of quality-of-life and mental-health signals (PROMs, speech, wearables) that feeds back into care.
- Designs that measurably reduce inequity: rural, elderly, low-digital-literacy and non-Spanish-speaking users included.



CHALLENGE 4



**WHAT GOOD
LOOKS LIKE**

A pilot with a hospital or patient organisation showing movement on a validated quality-of-life measure, and a model that survives beyond the pilot.

KEY WORDS

matching algorithms · PROMs · telemedicine · digital mental health · speech & wearables





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BACKGROUND

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Almirall is a global company dedicated to skin health, founded in 1944 and headquartered in Barcelona, Spain. Our noble purpose is at the heart of our work: “Transform the patients' world” by helping them realize their hopes and dreams for a healthy life. Through pharmaceutical innovation, investment in R&D and a firm commitment to healthcare alliances and partnerships worldwide, we develop and commercialise solutions focused specifically on dermatological diseases.

AREAS OF INTEREST

Applied Computing & Computer Science

LIFE SCIENCES

DATA & ANALYTICS

ARTIFICIAL INTELLIGENCE



CHALLENGE 1



TITLE Transfer learning framework that adapts oncology-trained neural networks to dermatology applications

DESCRIPTION The success of large-scale AI models in oncology has created an unprecedented opportunity to accelerate innovation in dermatology. These foundation models, trained on vast collections of genomic, transcriptomic, histopathological, imaging, and clinical data, have learned rich biological representations that capture fundamental processes such as immune activation, tissue remodeling, fibrosis, and cellular differentiation. Many of these mechanisms are also central to immune-mediated skin diseases.

This challenge proposes the development of a transfer learning framework that adapts oncology-trained neural networks to dermatology applications, enabling the reuse of biological and imaging knowledge acquired from millions of cancer samples. The resulting platform will establish a scalable and reusable AI infrastructure for precision dermatology, reducing data requirements, accelerating discovery, and supporting the development of next-generation therapies for dermatological diseases.



CHALLENGE 2



TITLE

Design and development of skin imaging sensors

DESCRIPTION

Almirall faces the challenge of developing advanced imaging sensors capable of non-invasively measuring the key physiological and structural properties of human skin.

By integrating, among other things, multispectral imaging, thermal sensors and skin mapping, the sensors will enable accurate assessment of parameters such as hydration, pigmentation, elasticity and vascularisation.

The technology is designed to support dermatological research, personalised skin care and clinical diagnosis, offering a scalable platform for real-time skin analysis across diverse settings and populations.



CHALLENGE 3



TITLE Marketplace centralising access to biological samples and disease models

DESCRIPTION

Data generation is a challenge for modern pharmaceutical research. To our knowledge, there is no centralised research marketplace tailored to the pharmaceutical industry and designed to streamline access to providers of biological samples and animal disease models.

The platform should enable direct interaction between pharmaceutical companies and providers of live specimens, tissue samples and digital molecular data, allowing faster and more transparent collaboration.

By consolidating fragmented sourcing channels into a single, searchable interface, the marketplace will accelerate preclinical research, improve traceability and support regulatory compliance across global biomedical ecosystems.





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æ AirEuropa

BACKGROUND

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For 40 years, Air Europa has evolved into a key airline connecting Europe with the Americas, Africa, and the Middle East from its hub in Madrid. As part of the SkyTeam alliance, it combines an extensive international network with quality service and a modern, efficient, and sustainable fleet of 60+ aircraft.

Its continued focus on innovation and network expansion enables Air Europa to offer an enhanced passenger experience that caters to all different segment needs.

AREAS OF INTEREST

ARTIFICIAL INTELLIGENCE

SUSTAINABILITY

DATA & ANALYTICS

SUPERCOMPUTING / HPC

Aina

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CHALLENGE 1

TITLE

Quantum-Powered Digital Twin for Airline Network Resilience

DESCRIPTION

Airline operations are driven by highly interconnected factors including aircraft, crew, passenger flows, weather, airport constraints and air traffic congestion. The challenge is to develop a high-fidelity digital twin of the airline network, extending towards airspace modelling, capable of simulating and evaluating thousands of simultaneous what-if scenarios in real time.

The objective is to support disruption recovery while enabling predictive simulations that proactively identify and mitigate operational risks. The ultimate goal is to explore how quantum computing could transform decision-making in highly complex operational environments.

KEY WORDS

Quantum Computing • Airspace • Digital Twin • Optimisation • B2B



CHALLENGE 2

 AirEuropa

TITLE Intelligent Airport Stand Allocation and Scenario Impact Simulation

DESCRIPTION Airport operations are increasingly constrained by stand availability, infrastructure limitations, resource allocation and traffic congestion. The challenge is to develop a decision-support platform capable of optimising aircraft stand allocation while accounting for operational constraints such as contact versus remote stands, equipment availability and timing restrictions.

The objective is to assess the downstream impact of allocation decisions on delays and turnaround performance. The ultimate goal is to improve operational efficiency and resilience in highly constrained environments through simple interfaces and actions.

KEY WORDS Operations Research • Airport • Digital Twin • Simulation • B2B





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Transports Metropolitans
de Barcelona

BACKGROUND

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Transports Metropolitans de Barcelona (TMB) is the leading public transport operator in Barcelona, managing the city's metro and bus networks as well as several mobility services across the metropolitan area.

AREAS OF INTEREST

ARTIFICIAL INTELLIGENCE

LANGUAGE TECH / AINA

Aina

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CHALLENGE 1

TITLE

Real-Time Multilingual Video Conferencing

DESCRIPTION

How can we develop a solution capable of recognizing, transcribing, and translating multilingual conversations in real time – including Catalan – where participants may speak different languages simultaneously or switch between languages during the same meeting, while allowing users to view both the original transcript and translated versions in selected languages without losing accuracy, context, or speaker attribution, and ensuring seamless integration with leading video conferencing platforms such as Microsoft Teams?

KEY WORDS

AI · Teams · language tech · transcript



**Transports
Metropolitans
de Barcelona**



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 **Bristol Myers Squibb**
NEXIA

BACKGROUND



Bristol Myers Squibb is a global biopharmaceutical company focused on serious disease, with oncology and haematology as its largest therapeutic areas. Its Spanish affiliate runs a Digital Health & AI portfolio deployed with hospitals and regional health authorities, under the naming of “NEXIA”: from AI-assisted chest X-ray screening, digital pathology to patient-journey redesign in oncology day hospitals.

AREAS OF INTEREST

ARTIFICIAL INTELLIGENCE

DATA & ANALYTICS

LANGUAGE TECH / AINA

CHALLENGE 1



TITLE

Voice-to-structured text for oncology anamnesis

CONTEXT

In an oncology consultation the physician spends much of the visit typing rather than looking at the patient. The anamnesis (symptoms, toxicities, functional status, social context) is the richest signal of the visit, and most of it never reaches the electronic health record in structured form.

CHALLENGE

A demonstrator that captures the consultation by ambient voice and returns a structured, coded clinical note. Real consultations are Catalan and Spanish, often in the same sentence, and carry dense oncology terminology. No clinical corpus exists in Catalan for this domain, and inference must run within hospital data-protection limits.



This challenge focuses on language technologies; the solution you propose must incorporate the resources from the Aina project. Please find all of the Aina's resources linked here and on the website.

CHALLENGE 1



OUR INTEREST

Give consultation time back to the patient, and leave behind structured data that is reusable for follow-up and research. Aina Kit and Salamandra are the natural starting point.

KEY WORDS

ASR • clinical NLP • Catalan / Aina • FHIR



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CHALLENGE 2



TITLE Next-best-action on the oncology record

CONTEXT Once the anamnesis is structured, the next decision — which complementary test, which referral, which follow-up interval — still rests on the clinician recalling a long patient history under time pressure.

CHALLENGE A demonstrator that reasons over the structured anamnesis together with the longitudinal record and proposes the next best action, grounded in clinical guidelines and traceable to its source. Every recommendation must be explainable, reviewable and reversible by the physician.



CHALLENGE 2



OUR INTEREST

Evidence here is still limited and the regulatory bar is high (MDR, AI Act). We are looking for a rigorous evaluation framework before any deployment — the part a research partner adds most value to.

KEY WORDS

agentic AI · guidelines · evaluation · MDR





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renfe

BACKGROUND



Renfe is Spain's leading railway operator and has been developing an Artificial Intelligence strategy since 2025 as a key enabler of its Digital Transformation Plan. Through open innovation initiatives and internal programmes, the company is exploring how AI can improve operational efficiency, sustainability and decision-making across the railway ecosystem.

AREAS OF INTEREST

SUPERCOMPUTING / HPC

SUSTAINABILITY

ARTIFICIAL INTELLIGENCE

DATA & ANALYTICS



CHALLENGE 1

TITLE AI-Powered Digital Twin for Railway Network Simulation and Operational Optimisation

DESCRIPTION Develop a digital twin of the railway network capable of simulating train circulation, infrastructure constraints, passenger demand, incidents and operational disruptions in near real time.

The solution should leverage AI and HPC capabilities to analyse thousands of potential scenarios, supporting traffic planning, capacity management, disruption recovery and operational decision-making. The expected outcome is a more resilient, efficient and sustainable railway system.

KEY WORDS Digital Twin · AI · HPC · Railway Operations · Simulation · Optimisation · Predictive Analytics · Sustainability



CHALLENGE 2

renfe

TITLE Predictive Railway Operations Through Digital Twins and Multimodal Data Analytics

DESCRIPTION Investigate how digital twins can integrate infrastructure, rolling stock, IoT and operational data to anticipate failures and assess their impact on network performance.

By combining predictive models with large-scale simulation capabilities, Renfe seeks to improve maintenance planning, reduce service disruptions and optimise asset utilisation across the railway ecosystem.

KEY WORDS Digital Twin · Predictive Maintenance · AI · Data Analytics · Sensor Data · Operational Resilience



renfe

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BACKGROUND

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SEAT, S.A. is Spain's only automotive company with fully integrated capabilities spanning vehicle design, development, manufacturing, and commercialization. Established in 1950 and a member of the Volkswagen Group, the company is headquartered in Martorell, Barcelona, and markets its vehicles under the SEAT and CUPRA brands. SEAT, S.A. exports more than 80% of its production and maintains a commercial presence in over 70 countries across five continents.

AREAS OF INTEREST

ARTIFICIAL INTELLIGENCE

DATA & ANALYTICS

Aina

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CHALLENGE 1

How might we use AI to anticipate delivery risks across a complex IT demand portfolio before delays occur?

TITLE	Predictive IT Demand & Delivery Intelligence
DESCRIPTION	Relevant information is distributed across work-management tools, project documentation and operational records. The proposed solution should combine these heterogeneous signals to: • predict schedule, dependency and delivery risks; • identify recurrent bottlenecks and root-cause patterns; • highlight workload, coordination or handover constraints; • recommend preventive actions with confidence indicators; • provide explainable, role-based insights for teams and management; • demonstrate measurable improvement versus reactive monitoring; and • ensure responsible data handling and human oversight.



CHALLENGE 1

OBJECTIVE

The solution should be scalable, complement existing ways of working rather than replace core systems, and enable questions such as: “Which initiatives are most at risk, and why?” / “What action could reduce that risk now?”

KEY WORDS

AI • predictive analytics • process mining • Jira • decision support



CHALLENGE 2

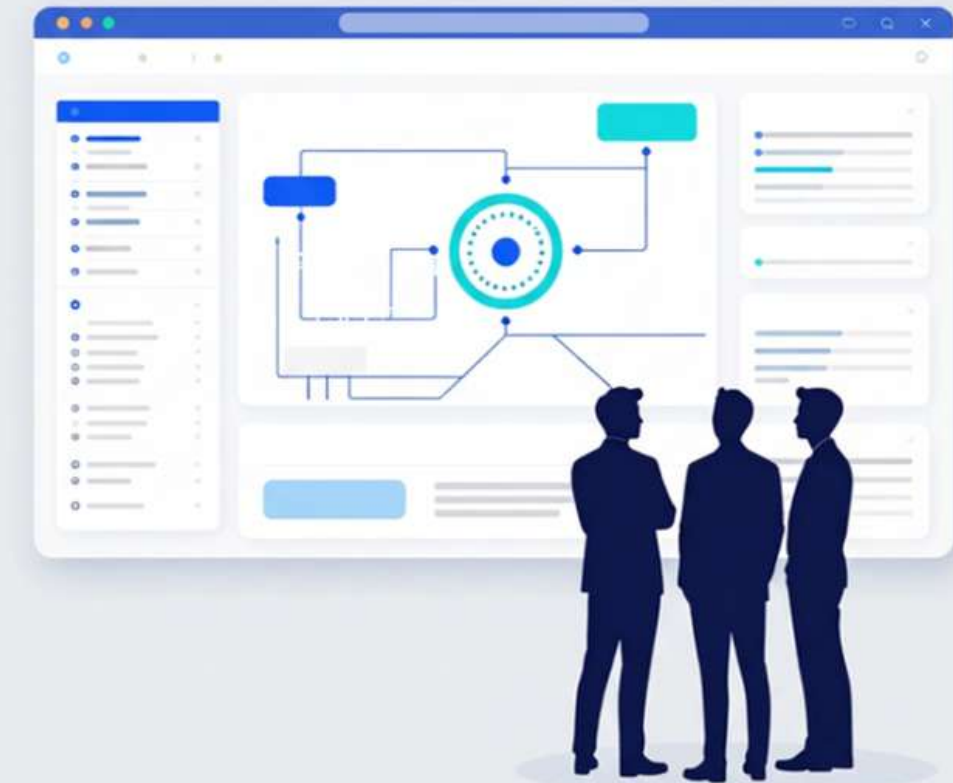
How might we use historical incident data to anticipate major failures and recommend preventive action?

TITLE Predictive Incident Intelligence & Prevention

DESCRIPTION

The solution should analyse incident records, resolution histories and system criticality to:

- identify recurring patterns and early-warning signals;
- predict high-impact or recurrent incidents before they occur;
- prioritise recommended action plans according to system criticality and risk class;
- identify likely root causes and effective resolution paths;
- detect inefficiencies in incident handling, including tickets repeatedly reassigned between support groups;
- recommend improvements to routing, ownership and escalation;
- provide clear, explainable insights for operational teams and decision makers.



CHALLENGE 2

OBJECTIVE

The objective is to move from reactive incident resolution towards proactive service–risk prevention, while keeping final decisions under human control.

KEY WORDS

AI · predictive analytics · incident management · risk class · process mining



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vueling

BACKGROUND

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vueling

Vueling, an IAG company, is a benchmark airline in Europe and key to connectivity in Spain.

Vueling Airlines is a leading low-cost carrier headquartered in Barcelona. It connects passengers to dozens of destinations across Europe, North Africa, and the Middle East, offering affordable and convenient travel options through an extensive route network.

ARES OF INTEREST

SUPERCOMPUTING / HPC

SUSTAINABILITY

ARTIFICIAL INTELLIGENCE

DATA & ANALYTICS

Aina

 **Generalitat
de Catalunya**

CHALLENGE 1

vueling

TITLE

eSAF production

DESCRIPTION

The aviation sector faces increasing pressure to decarbonize while maintaining operational efficiency and scalability. This open challenge seeks disruptive deep tech solutions to enable the production of sustainable aviation fuels (SAF) through innovative pathways, including synthetic fuels (eSAF), carbon capture utilization, advanced catalysis, and novel feedstocks. The goal is to attract diverse approaches from startups, research teams, and technology developers that can accelerate the transition toward cleaner aviation.

KEY WORDS

eSAF · sustainability · decarbonization



CHALLENGE 2

vueling

TITLE

Flight paths optimization

DESCRIPTION

The aviation industry is increasingly looking for digital technologies to improve efficiency and reduce environmental impact. This open challenge calls for innovative solutions to optimize flight paths using advanced technologies such as artificial intelligence, data analytics, real time systems, and high-performance computing. The aim is to enable smarter, more adaptive routing strategies that reduce fuel consumption, emissions, and operational costs while maintaining safety and reliability.

KEY WORDS

AI · data · HPC



CHALLENGE 3

vueling

TITLE	Dynamic Intent–Aware Personalization
DESCRIPTION	How can we use privacy–first open city data (such as urban mobility networks, cultural events calendars, and municipal APIs) to dynamically predict a traveler’s current journey intent, allowing Vueling to deliver hyper–personalized, context–aware services without causing over–personalization friction? We invite startups to propose solutions in Intent Prediction Engines, Smart City Data Integration or Contextual “Invisible Retailing”.
KEY WORDS	Customer experience • Data



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ANTEDECENTES



Accent obert

Accent Obert x IA is a Catalan initiative working to make Catalan a fully operational language in artificial intelligence – across text, speech and video – and a European reference case for medium-sized languages.

Accent Obert x IA connects linguistic data and quality, open infrastructure, sectoral adoption and governance. Accent Obert acts as the institutional and ecosystem-orchestration umbrella, while BSC/AINA is the reference scientific and technological partner, contributing infrastructure, models, data and technical validation to specific projects. The goal is to turn technological capabilities into real products and services, particularly in education, public administration, law, healthcare, culture and social inclusion.

AREAS OF INTEREST

LANGUAGE TECH / AINA

DATA & ANALYTICS

ARTIFICIAL INTELLIGENCE

SUPERCOMPUTING / HPC



CHALLENGE 1

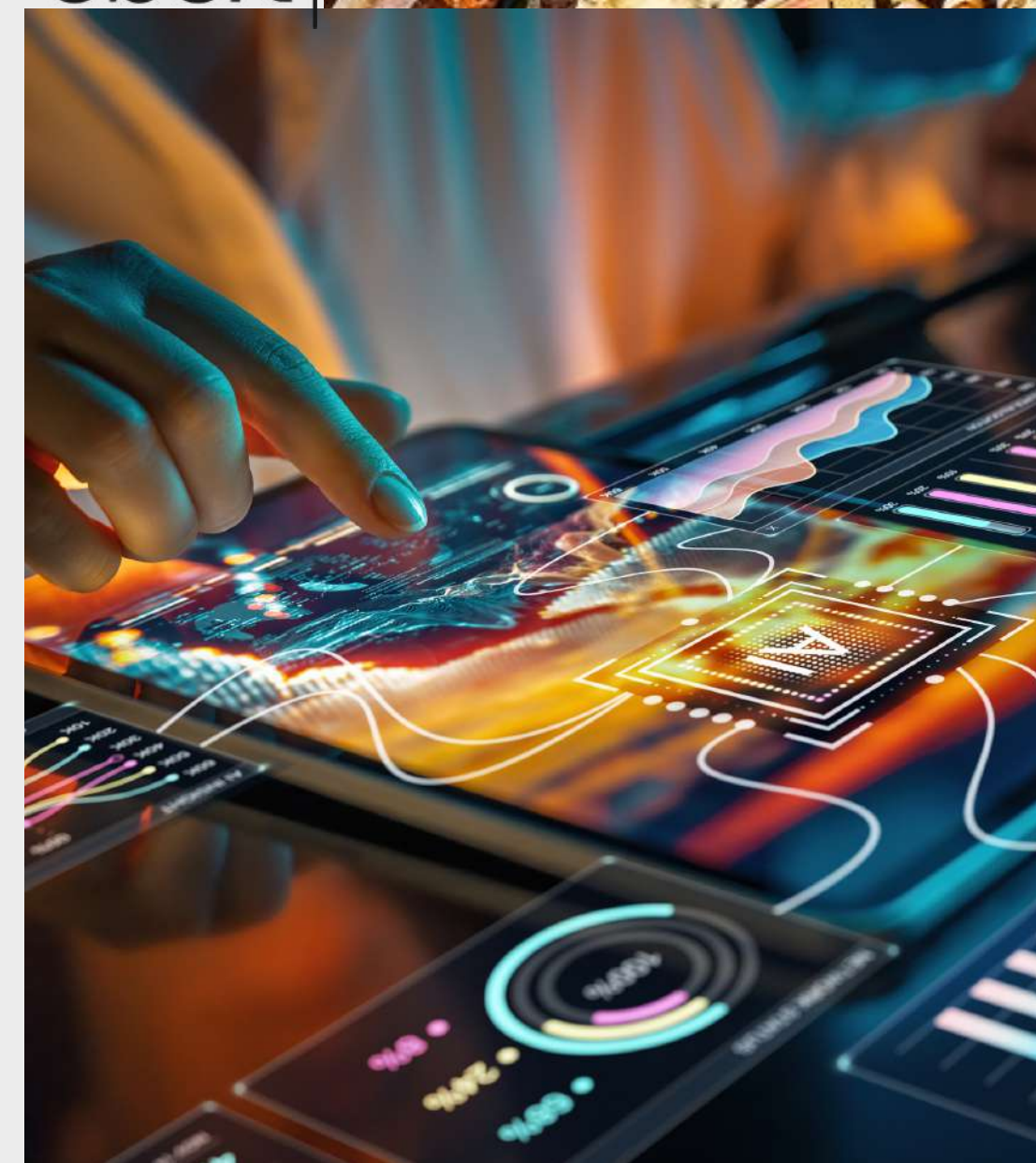
TÍTULO

Catalan Debate Agents (CDA) – Domain–specialised multi–agent AI for high–quality Catalan data

DESCRIPCIÓN

General–purpose models still have significant limitations in professional contexts where terminological precision, conceptual consistency and normative appropriateness are critical. We propose a platform of specialised agents that debate a question from opposing positions — affirmative and negative — in domains such as law, education, healthcare and finance. Each debate is generated in Catalan, submitted for expert validation and converted into transcripts and annotated corpora, in text and audio, that can be reused to train and evaluate models. The system should combine specialised agents, retrieval from authoritative sources, source traceability, professional validation, and linguistic and factual quality metrics.

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obert



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CHALLENGE 1

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OBJECTIVE

Build a functional prototype with four agents, produce an initial corpus of curated debates and integrate it with AINA/BSC infrastructure to improve coverage of critical domains in Catalan.

EXPECTED OUTCOME

A safe and auditable multi-agent environment that produces high-quality professional data and can scale to other sectors, formats and language communities.

POTENTIAL ROADMAP

Initial prototype; generation of a pilot corpus of approximately 1,000 curated debates; integration and evaluation on AINA/BSC.

KEY WORDS

multi-agent AI · specialised LLMs · Catalan · domain adaptation · RAG · expert validation · data generation · NLP · ASR/TTS · language quality · legal/health/education AI



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CHALLENGE 2

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TÍTULO

Catalan for Newcomers A 24/7 GenAI mentor for Catalan language learning and multimodal data generation.

DESCRIPCIÓN

The limited availability of accessible Catalan courses for newcomers restricts linguistic inclusion. We propose a web or mobile self-learning platform based on GenAI that acts as a digital mentor available 24/7, initially for adults at A1 level.

The product will offer five-to-ten-minute micro-lessons, interactive dialogues, guided practice, activities generated from a curated curriculum, automated feedback and adaptive progression. It will include support languages to facilitate access – for example Arabic, Amazigh, Urdu or Romanian – and will focus on real-life situations: work, housing, public services, healthcare, shopping and social interaction.

With appropriate consent and data governance, user interactions will generate authentic multimodal data – text, speech and potentially video – that can be curated and reused to strengthen Catalan corpora and speech and language models. Quality will be controlled through automatic filters, normative references, user feedback, human review and benchmarks developed by the Accent Obert x IA Observatory.



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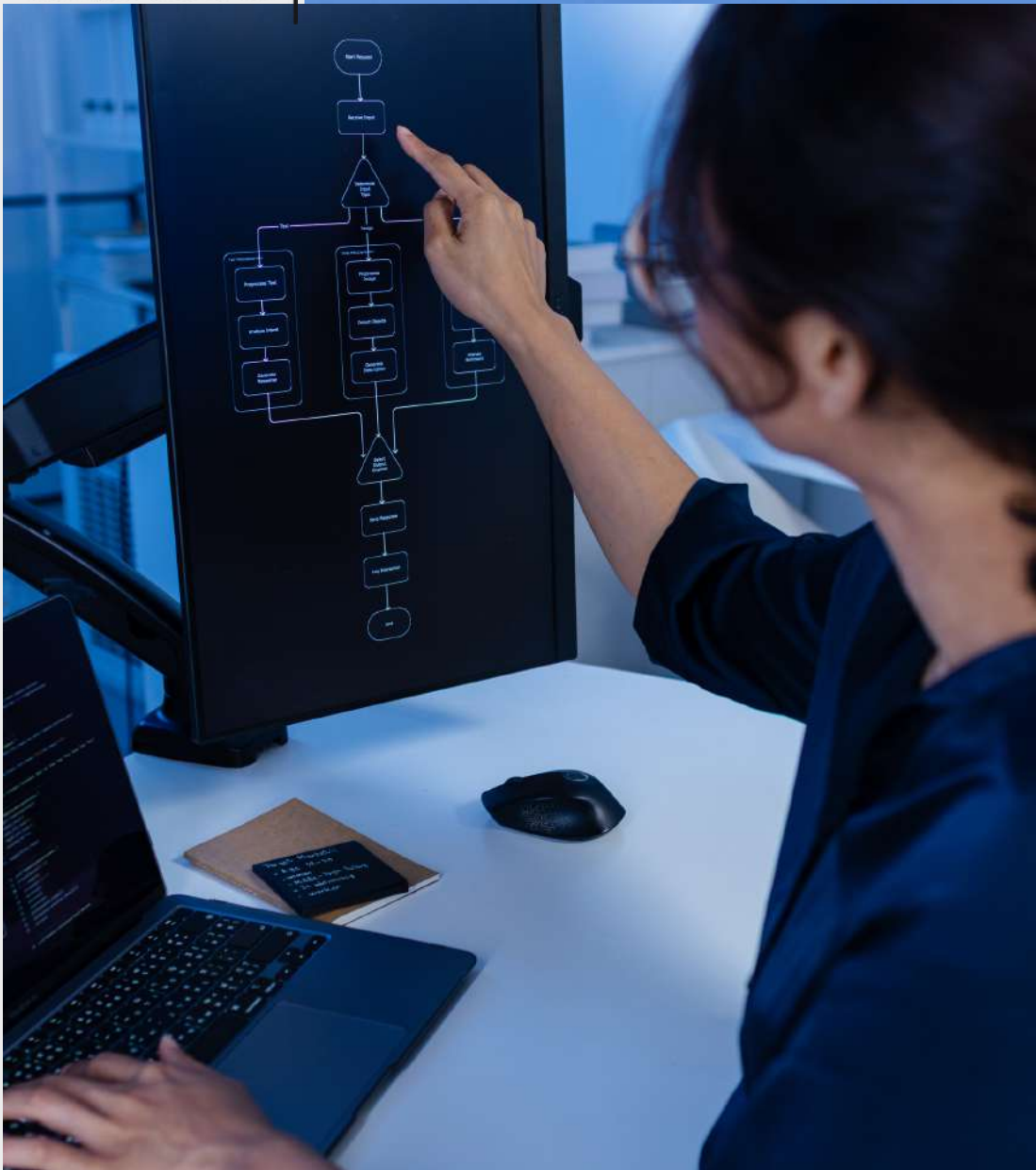
CHALLENGE 2

Accent
obert

OBJECTIVE Move from zero to a minimum viable product in three to six months, starting with six to eight A1 units and validating it through a pilot of approximately 50–100 users recruited through a newcomer–support organisation.

EXPECTED OUTCOME A tool with immediate social impact that makes Catalan learning more accessible while creating a sustainable flow of high–quality multimodal data.

KEY WORDS GenAI education · language learning · Catalan · newcomers · adaptive learning · conversational AI · multimodal data · speech technology · inclusion · digital mentor · AINA



This challenge focuses on language technologies; the solution you propose must incorporate the resources from the Aina project. Please find all of the Aina's resources linked here and on the website.

Accent obert |

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Challenges
proposed by

3cat

ANTEDECENTES



3Cat (Corporació Catalana de Mitjans Audiovisuals) is the public media corporation of Catalonia, responsible for television, radio and digital media services. Through its multiple broadcast channels, streaming platforms and extensive audiovisual archive, 3Cat produces, distributes and preserves large volumes of multilingual content for diverse audiences. As media consumption increasingly shifts towards digital and connected devices, 3Cat faces new challenges related to AI-powered content delivery and multilingual accessibility. To address these challenges, 3Cat seeks innovative solutions that improve user experience and automate content adaptation processes.

AREAS OF INTEREST

LANGUAGE TECH / AINA

DATA & ANALYTICS

ARTIFICIAL INTELLIGENCE

SUSTAINABILITY



CHALLENGE 1



TÍTULO

Large Language Models for Low-Resource TV Devices

DESCRIPCIÓN

Develop lightweight Large Language Models capable of running on resource-constrained HbbTV devices, enabling intelligent conversational interfaces, enhanced content discovery and personalised user assistance directly on the device. The objective is to provide users with a more natural and engaging way to access audiovisual content while reducing dependence on external cloud services. The solution should prioritise privacy, data protection and technological sovereignty, minimising the transfer of user data to third-party platforms while maintaining acceptable performance, low latency and scalability.

KEYWORDS

LLMs, HbbTV, Low-resource computingAI



This challenge focuses on language technologies; the solution you propose must incorporate the resources from the Aina project. Please find all of the Aina's resources linked [here](#) and on the website.

CHALLENGE 2

3cat

TÍTULO

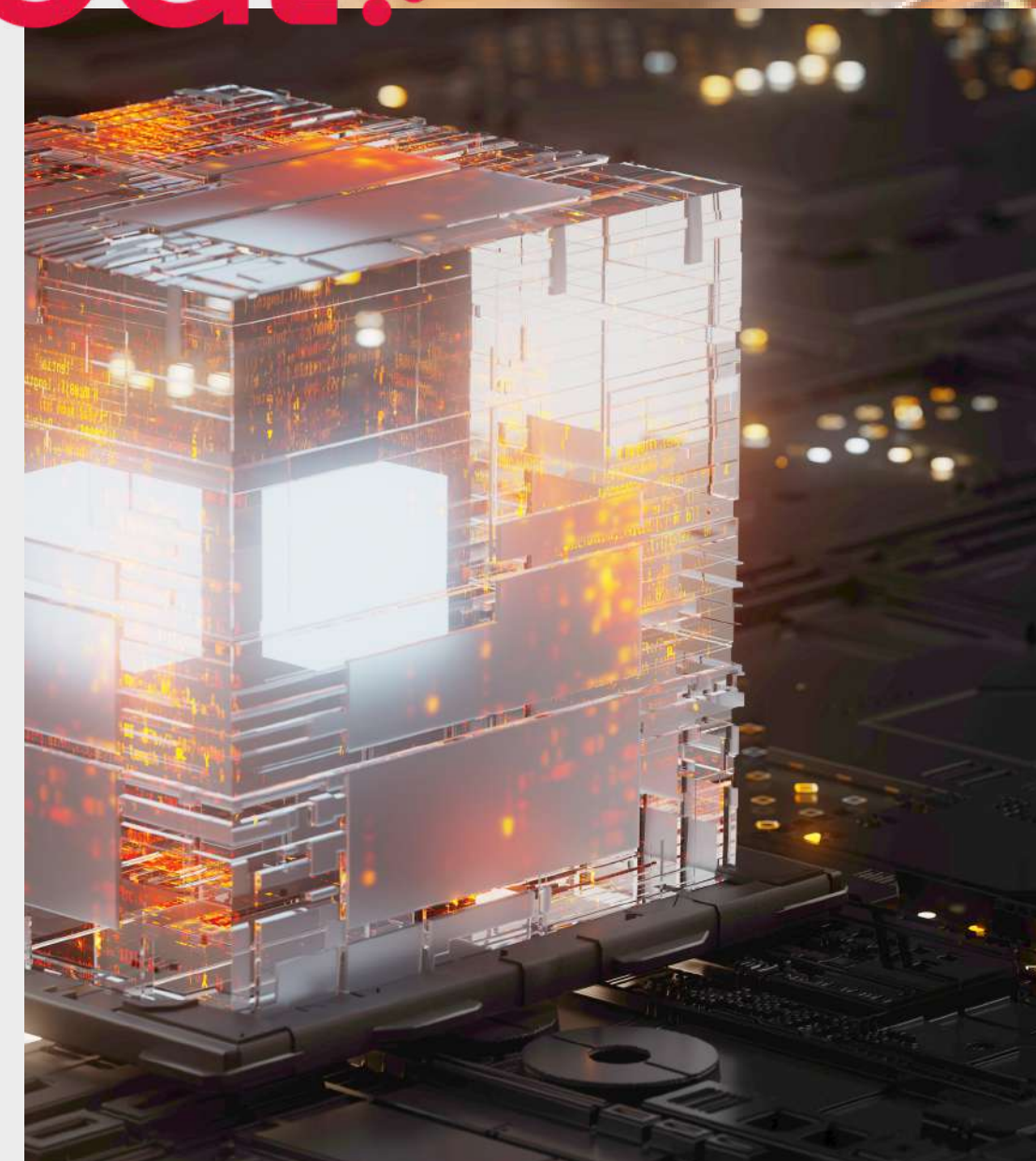
Real-Time Dubbing and Automatic Quality Assessment

DESCRIPCIÓN

Develop an AI-based solution capable of performing real-time dubbing into multiple languages and automatically assessing the quality of the generated translations and voice outputs. Because human reviewers may not be available for all target languages, the system should automatically detect translation errors, inconsistencies, pronunciation issues and cultural mismatches, ensuring high-quality adaptation of audiovisual content across diverse linguistic and cultural contexts.

KEYWORDS

Real-time dubbing, Speech translation, AI quality control, Multilingual AI.



This challenge focuses on language technologies; the solution you propose must incorporate the resources from the Aina project. Please find all of the Aina's resources linked here and on the website.



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