

INDUSTRIAL & PUBLIC AI (ARTIFICIAL INTELLIGENCE) CHALLENGE: PUBLIC SELECTION NOTICE FOR COMPANIES

INTRODUCTION

The Industrial & Public AI Challenge (hereinafter, "Competition", or "Initiative") is an initiative of advanced training and promotion of Trentino research dedicated to university students and researchers promoted by Fondazione Hub Innovazione Trentino (hereinafter, "HIT") and created in collaboration with the University of Trento, the Bruno Kessler Foundation, Trentino Sviluppo and Confindustria Trento (in the context of the Digital Innovation Hub Trentino–Alto Adige/Südtirol) and the Autonomous Province of Trento – PAT.

The initiative has dissemination, knowledge and training purposes. The main objective is to encourage the development of technology transfer activities and collaborations between researchers and companies or public administrations in an open innovation context:

- allowing companies and public administrations to learn about the benefits of using methods of analysis and optimization of industrial production processes and related products through the application of artificial intelligence technologies;
- allowing university students to master these methodologies by applying them to industrial and public problems and challenges, improving their preparation (Challenge-Based Learning);
- offering teachers and researchers an opportunity to transfer their knowledge and technological know-how.

Specifically, the Initiative allows participating companies and public administrations (hereinafter, "Challenge owners") to benefit from data analysis, production of advanced statistics, creation of predictive models and guidelines for the adoption of industrial solutions for the planning and optimization of industrial processes and public services based on artificial intelligence technologies.

The activities of the Initiative are mainly carried out by students and young researchers competent in the methodologies described (hereinafter, "Solver"): they will work in groups to analyze and propose solutions to the problems or objectives of exploration of opportunities presented by the participating companies and public administrations (of hereinafter, "Challenges"). Solver groups will be supported by professional mentors (researchers and startups – hereinafter, "Mentors").

Specifically, by way of example, we mean:

- **Challenges:** each Challenge selected in the initiative will be either presented by a company ("Industrial AI Challenge" type), or by a public administration ("Public AI Challenge" type), as follows:
 - **Industrial AI Challenges:** corporate objectives related to the collection and enhancement of large amounts of data from industrial processes to improve business performance, in the following areas of industrial innovation (hereinafter, "Areas") exemplary, but not exhaustive: (1) logistics and supply chain; (2) production planning; (3) predictive maintenance; (4) component status verification; (5) quality control and SPC (Statistical Process Control); (6) robotics and automation.

- **Public AI Challenges:** improvement of performances, optimization and prediction of events entailing with the organization and delivery of public services and procedures, in sectors such as: (1) cultural heritage management (e.g. automated analysis of images and texts); (2) weather prediction (detection of sensor anomalies from meteorological data); (3) education (optimizing available resources and needs); (4) tourism (prediction of tourist future volume flows).
- **Activities:** use of methodologies and techniques for the study of production and logistic processes, their possible sensorization, and analysis of large amounts of data aimed at the production of intelligent systems and predictive models to support decision-making in companies and public administrations. Specifically, the Activities may involve Solvers in the execution of the following tasks: analysis of the Challenge with personnel from the Challenge owner and the Mentor (objectives and expected results); analysis and evaluation of the quantity and quality of available data; in-situ visit to company production plants or offices to observe the production process, machinery involved, Challenge context; analysis of the production processes involved; requirements analysis for any sensorization of lines with IoT - Internet of Things solutions; creation of databases on cloud services and virtual machines; data acquisition support; data cleaning; integration of data from third parties; pre-processing; extraction of relevant features; data analysis with advanced statistical methods; machine learning; creation of predictive models; feedback and reporting to companies and organizers; production of suggestions and guidelines for the enhancement of data and processes in the Challenge owner.

ART. 1 – SUBJECT OF NOTICE

This Notice is aimed at selecting Industrial AI Challenges presented by manufacturing companies that will have access to the Initiative, on which the above Activities will be applied. Notice that the Public AI Challenges will be provided directly by the PAT – Provincia Autonoma di Trento.

ART. 2 – CONDUCT OF THE CHALLENGE

The Competition requires groups of multidisciplinary Solvers (hereinafter, “Teams”) to work in parallel over the course of approximately two months to carry out the aforementioned Activities on the selected Challenges. For each Challenge, there will be one or more dedicated Team, which will work independently, albeit assisted by one or more Mentors who will support them in carrying out the Activities and in the production of a short final report containing solutions for tackling the matched Challenge (hereinafter, “Results”). The selection of the Solvers, the creation of the Teams and their training will be carried out by HIT, in coordination with the partners of the initiative.

The Competition will be organized according to the following schedule:

- **Kick-off meeting (KOM):** Friday **September 16th, 2022** (afternoon) for the Industrial AI challenge and Thursday **September 22nd, 2022** (afternoon) for the Public AI challenge: presentation of the Challenges and optimization objectives to the Solver groups by the selected Challenge owners.
- **Execution of Activities:** approximately 11 weeks in which the Teams will carry out the above activities independently, in collaboration with the selected Challenge owners, assisted by expert Mentors. The phases of the Competition and the Activities to be carried out during the

11 weeks may differ according to the type of Challenge assigned. In total, it is estimated that the Competition will engage the student for approximately 75 hours, including training activities, kick-off meeting, final event, business meeting, visits, group and individual activities.

- **Final public events:** Teams will present their Results without confidential content, during a final event open to the public. Private full presentations to Challenge owners will be organized autonomously by teams prior to the final events. The events will be held at the CLab Trento, in Via Tommaso Gar 16/2 on **Friday December 2nd, 2022**, morning for the Public AI Challenge, and afternoon for the Industrial AI Challenge. In the event that the health provisions in force do not allow the event to be organized in safe conditions, it will be held online.

At the end of the Challenge, HIT will work with the participants in order to facilitate the continuation of the collaboration between Challenge owners, students and Mentors in order to further mature the Results and proceed to their enhancement.

ART. 3 – METHOD OF EVALUATION OF RESULTS AND AWARDING OF TEAMS

A Commission of experts appointed by HIT will express an evaluation on the Results presented by each Team and will formulate one ranking per each Challenge type, based on the following criteria:

- Criterion 1: ability to carry out the Activities correctly (from 1 to 5 points).
- Criterion 2: completeness and maturity of the Results (from 1 to 5 points).
- Criterion 3: innovativeness of the Results (from 1 to 5 points).
- Criterion 4: potential business impact of the Results (from 1 to 5 points).
- Criterion 5: effectiveness of the presentation of the Results (from 1 to 5 points).

Solvers who have fully accepted the conditions in Art. 8 will be entitled to compete for the award of a final prize.

- Industrial AI Challenge type: each member of the Team who has totaled the highest score in the ranking will receive as a prize free access to the catalog of courses in Deep Learning available on Coursera.org for a duration of 6 months. In the case of a tied score, the Solver group with the highest score on criterion 1 and, subsequently, on the following criteria, will prevail.
- Public AI Challenge type: awarded by the Department of Engineering and Information Science (DISI) of the University of Trento. Please, see the letter attached to the call.

To all Solvers who complete the Challenge, HIT will deliver a certificate of participation in the initiative. To students enrolled in degree courses of the Department of Information Engineering and Information Science (DISI) and of the Department of Industrial Engineering (DII) of the University of Trento who will complete the Initiative, and who have included the activity within the own study plan, some ECTS will be recognized: for more information, please consult the note of the University of Trento published together with this Notice.

ART. 4 – METHODS OF SELECTION OF APPLICATIONS

Companies interested in participating in the Challenge by submitting an Industrial AI Challenge must fill in the application form downloadable from the page

<https://www.trentinoinnovation.eu/en/innovate/innovation-tools/ai-challenge/> and send it to ai-challenge@trentinoinnovation.eu by Friday **24 June 2022 at 11.59 pm - Central European Summer Time**. Applications received after the deadline indicated above or whose form is not complete in any part indicated as mandatory will be considered inadmissible, even if the different or non-presentation or the delay in submitting the application to participate in this procedure are due to cases of force. major, unpredictable events or third-party actions.

In any case, HIT reserves the right to modify, suspend, extend, revoke this procedure at any time or not to follow it up, if, at its sole discretion, it detects the need or opportunity.

A Commission appointed by HIT will select the Industrial AI Challenges eligible to participate in the Initiative. This Commission will be composed of internal staff and representatives of some members of HIT and other partners of the Initiative.

The eligibility criteria used by the Commission are as follows:

1. *Relevance*: relevance of the Challenge to the above-mentioned innovation Areas (score: 1-5).
2. *Impact*: potential impact of the Activities and expected Results on the company's business (score: 1-5).
3. *Quality*: clarity of the Challenge and related innovation objectives, completeness of information and availability of data (score: 1-5).

To be considered eligible, Industrial AI Challenges must achieve a minimum score of ten (10). Once the ranking has been drawn up, the Commission will select the Industrial AI Challenges that will obtain the best score. In the event that the same Challenge owner has submitted more than one Challenge that will be eligible, only the Challenge rated with the higher score will be considered.

By **Tuesday 5th of July 2022**, companies will receive an email communication regarding the results of the Commission's selection process.

Within 7 days of receiving this communication, companies whose Challenge have been selected may renounce participation in the Initiative by notifying them by e-mail to ai-challenge@trentinoinnovation.eu. In this case, HIT will propose participation in the Initiative to the company whose Challenge is in the next position in the ranking.

During the Initiative, brief descriptions free from confidentiality aspects of the selected Challenges, and of the related Challenge owners, will be published on the dedicated web page.

ART. 5 – TERMS OF PARTICIPATION

Within 5 days of receiving notice of the results of the selection, companies whose Challenges have been selected may renounce participation in the Initiative by sending an email to ai-challenge@trentinoinnovation.eu. In this case, HIT will offer participation in the Initiative to the company whose Challenge is in the next position in the ranking.

The companies selected and confirming their participation undertake to pay the participation fee of Euro 500.00, plus VAT, to HIT by 15 July 2022, to IBAN IT 84 I 02008 05364 000103978293 (further information at this URL: <https://trasparenza.trentinoinnovation.eu/ita/Pagamenti-dell-amministrazione/IBAN-e-pagamenti-informatici>), under penalty of exclusion from the Initiative. At the

end of the process, the references of the selected Challenges and of the relevant companies will be published on the web page of the Initiative.

ART. 6 – TRADEMARKS

Challenge owners participating in the Initiative grant HIT a free and non-exclusive license to use their brand. Similarly, HIT grants participating Challenge owners a free and non-exclusive license to use their brand. This use must be aimed exclusively for the purpose of promoting the Initiative, for which the brands may be used on its website, as well as in relation to any product, service, event or advertising material.

The participating Challenge owners and HIT mutually acknowledge and accept that the respective trademarks are and remain the exclusive property of their respective owners and that no provision of this Notice is intended to confer any rights on such trademarks, outside the provisions of the previous paragraph. Therefore, the participating Challenge owners and HIT will not be able to assign, sublicense or otherwise dispose of the trademarks of others, without the relative written consent.

Participating Challenge owners will send their brands to ai-challenge@trentoinnovazione.eu by **20th of July 2022** in vector format or in image format other than vector with at least 300 dpi.

ART. 7 – CONFIDENTIALITY

HIT undertakes to keep the data and information included in the application form confidential, except for the data and following information, which may be freely disclosed in connection with the promotion needs of the Initiative: Challenge owner name, website URL, industry sector, brief description of the business activity and name of the Challenge. HIT also undertakes to keep the Results confidential.

Considering the confidential nature of the data and information referred to above, HIT also undertakes to (i) not disclose them in any way and in any form, without prejudice to the different written consent, even partial, of the company concerned; and (ii) not to use them for purposes other than those strictly necessary for participation in the Challenge.

HIT undertakes to impose this confidentiality obligation also on its employees, collaborators and consultants, as well as on all subjects who, by virtue of participating in the Competition as Solver or members of the Commissions, will become aware of such confidential data and information.

This confidentiality bond remains for three (3) years from the start date of the Competition.

The Challenge owner, however, undertakes to allow Solvers to present at the final events of the Initiative, which will be open to the public, and during other public events related to the Initiative, some information and non-confidential data concerning the Challenge, the Activities carried out, and the Results produced. Such information and data will be agreed in advance between the Challenge owner and the Solvers.

ART. 8 – INTELLECTUAL PROPERTY

The intellectual property rights of the Results will belong to the Challenge owner, without prejudice to the right of the Solvers to be recognized as authors or inventors.

By participating in the Initiative, Challenge owners in any case authorize Solvers to:

- mention your participation in the Initiative, making express reference to the name of the Challenge and to the Challenge owner for which they carried out the Activities;
- use part of the Results (not containing confidential material, to be agreed) to make public presentations during events, courses and initiatives related to the Challenge, for educational and dissemination purposes, at the end of the Initiative.

ART. 9 – ABSENCE OF GUARANTEES. EXEMPTION OF LIABILITY

The Results are presented by the Solvers and accepted by the Challenge owner "as is". Neither HIT nor the Solvers make any representations or warranties that the Results (i) are of a particular technical quality; (ii) are fit for a particular purpose; (iii) do not violate the rights of third parties or juridically protected subjective positions.

Neither HIT nor the Solvers assume any responsibility for the correctness, validity, originality and quality of the Results, which will be considered in complete autonomy by the Challenge owners.

The participating Challenge owners expressly exonerate HIT, the Solvers and the Initiative partners from any direct, indirect, incidental, consequential, punitive or moral damage resulting from participation in the Initiative or from the use of the Results.

ART. 10 – PROCESSING OF PERSONAL DATA

Pursuant to art. 13 of the GDPR 2016/679, we inform you that all the data that will be in the possession of HIT in carrying out the procedure provided for in this Notice will be used exclusively for the purposes specified therein and will be processed with the aid of information systems in full compliance with the aforementioned legislation. The data will not be communicated or disclosed to third parties. The data controller is HIT, in the person of the pro tempore legal representative, who can be contacted for the exercise of the rights provided, including the right to access data, integration, rectification and cancellation. To view the complete information, please refer to: privacy policy (https://www.trentinoinnovation.eu/wp-content/uploads/2022/05/2022_Public-Industrial-AI-Challenge_Informativa-Privacy_ENG.pdf).

ART. 11 – AUTHORIZATION TO PUBLISH YOUR OWN IMAGE

The participating Challenge owners endeavor to obtain all possible authorizations from the subjects who will represent them and will attend the Initiative so that HIT can publish their image in any form of support (press, websites, and the like) for the sole purpose of promoting and advertising the Initiative. HIT undertakes not to use any image in such a way that it may harm or prejudice personal dignity or in any case for purposes other than those indicated therein and / or contrary to the law.

ART. 12 – TREATMENT OF PRIZES

The Initiative is to be considered falling within the category "projects or studies in the commercial or industrial field, in which the awarding of the prize to the author of the chosen work is in the nature of consideration for the performance of the work or represents the recognition of personal title of encouragement in the interest of the community" pursuant to art. 6 Presidential Decree 26 October 2001, n. 430.

ART. 13 – RESPONSIBLE FOR THE PROCEDURE

The Head of the Procedure pursuant to the L.P. n. 23/1992 and s. m. e i.: ing. Luca Mion.

Trento, 24/05/2022

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Luca Mion
Head of Innovation and Techtransfer
Fondazione Hub Innovazione Trentino

SIGNED IN ORIGINAL