REGULATION OF TECHNOLOGICAL CHALLENGE NAMED "AI HACKATHON CHALLENGE"

I. Definition

1. The **AI Hackathon Challenge** is an initiative developed by the Portuguese Blockchain Alliance in partnership with Instituto Superior de Coimbra (ISEC), duly framed in the defined goals of the Alliance, aiming to endorse the promotion of knowledge on Exponential Technologies and the development of innovative solutions based in artificial Intelligence.
2. ISEC will be the sponsor of this challenge, whose organization will be overseen by the Portuguese Blockchain Alliance.
3. The **AI Hackathon Challenge** will focus on **developing a AI-based solution that can automatically detect and classify urban scene sounds (e.g. Car Horn; Drilling Engine; Gun Shot; Siren; and Street Music) to support local authorities to deal with public threat events (accidents, fire, robbery, traffic jams, etc.)**. Through this challenge we have the mission of receiving proposed solutions that can leverage the provided data sets (ANNEX) to: identify "sounds", build tools and services that alert authorities of public vulnerabilities, create solutions which combat urban crime, provide means for checking compliance when new laws and regulations are produced, and monetized the solution for distribution and management by several entities.

II. Objective of the Challenge

1. In the context of the Portuguese Blockchain Alliance, the goal of the **AI Hackathon Challenge** is:
    a) To promote innovation in the scope of exponential technologies in the Portuguese economic system;

III. Participants Categories

1. The **AI Hackathon Challenge** addresses two categories of participants:
    a) Startups;
    b) Students.

The participants should always apply in groups of 2 to 8 people regardless of the category of the participant (startups or universities). Groups can be composed of a set of partner entities if they belong to the same macro category: Public or Private (example: either a group composed of students from several universities or a group composed of two companies with complementary skills).

IV. Application and Requirements

1. The participants of the **AI Hackathon Challenge** must submit their application via the Hackathon site or the Alliance's website (in the form available at: https://all2bc.com/participar), completing all the mandatory fields below:
    a) Name of the group;
    b) Number of members of the group;
    c) Full name of the participants;
    d) Age of participants;
    e) Email of the participants;
    f) Challenge selection;

2. For any question or additional information about the application process, contact info@all2bc.com.

V. Phases and Selection Process of the Challenge

1. The **AI Hackathon Challenge** consists of three phases:
   I. **Development** of the proposed solution. The first phase (**Development**) focuses on developing the concept of the presented solution. This development is done in group and is supported in a mentoring model by ISEC and the Alliance. A single document limited to 7 pages in the main body should be submitted. The content of the document should include at least the following mandatory topics:
      - Solution's summary;
      - Final Concept;
      - Benefits;
      - Attachments.

   II. Solution **Mentoring**. After the development phase, the application is revised by the Challenge promoter, which includes a mentoring process. This phase focuses on improving the solution demonstration. In this phase, one document/mockup must be submitted:
      - A **document / application mockup** with a maximum of 10 slides that should be the presentation to be used before the selection jury with at least the following mandatory topics:
        - Executive summary;
        - Approach to the chosen Challenge;
        - Final Solution;
        - Merit and Evolution of the Solution;
        - Applicability Potential;
        - Benefits;
        - Attachments;

   III. **Presentation** of the final solution(s). Finally, the participants must make a presentation / solution demonstration before the selection jury. The presentation cannot exceed 15 minutes. After this period, the selection jury will have a maximum of 5 minutes to make questions to the competitors.

VI. Hackathon Deadlines and Selection Phases Formats

Phase I: Development

1. The AI Hackathon Challenge starts on May 14th, 2019 and the idea submission ends at 15:59 pm on May 14th, 2019;
2. All documents must be sent in PDF format with a maximum of 5 Mb;
3. This phase will continue until the final presentation.
4. In partnership, ISEC and the Portuguese Blockchain Alliance will proceed with the evaluation of the initial ideas;

Phase II: Mentoring

1. From 16:00 of the 14th of May, ISEC and Portuguese Blockchain Alliance will evaluate the ideas ideias and will give feedback for improvement;
2. This phase will continue until the final presentation.

Phase III: Presentation

1. The presentations before the selection jury will take place on May 15 at the site of the hackathon and schedules to be designated after 5:00 p.m.;
2. The order of the presentations will be established randomly;
3. Following the presentations, the jury will evaluate the solutions presented and deliberate on which will be considered finalists to present at the conference the next day. By 23:59 on May 15, 2019, participants will be informed of the jury's decision. The next day (May 16) the finalists will present their solutions at the conference.

Videos or photographs are accepted only if contextualized in the submitted document(s). The videos must be on Youtube in Unlisted format and with a maximum duration of 2 minutes. Photographs must be in JPEG format and have no more than 1 Mb.

VII. Criteria of Analysis and Evaluation

The projects will be evaluated according to the following criteria:

- Innovation (25%)
- Impact on the public sector (20%)
- Applicability to the market (20%)
- Feasibility (15%)
- Scalability (10%)
- Presentation (10%)

VIII. Selection Jury

1. The evaluation of the concept and demonstration is up to the Selection Jury.
2. The Selection Jury will be composed of elements of the following entities: ISEC, Portuguese Blockchain Alliance, and other members to be designated.
3. The decision of the Selection Jury is final and cannot be appealed.

IX. Rewards

1. Some rewards might be delivered to the best projects by the entity that promotes the challenge.
2. The rewards may include the following possibilities:
   - Communication with the media and the Alliance partners;
   - Internships at the Alliance partners;
   - Mentoring hours with CEOs of the Alliance partners;
   - Non-cash rewards (e.g. Drones, Parrots).

X. Personal Data Protection

1. For the purposes of the legislation on Protection of Personal Data, it is advised that personal data provided by the participants of this Challenge will be processed by ISEC and the Portuguese Blockchain Alliance, as Managers for Treatment.
2. The treatment of personal data of the participants by ISEC and the Portuguese Blockchain Alliance aims to (i) manage their participation in the challenge, (ii) to reward the participants with the best projects and (iii) to be compliant with legal obligations.

The processing of personal data for purposes (i) and (ii) is carried out based on the need to perform this challenge, in which the competitors participate voluntarily,

and the non-provision of personal data makes it impossible for the competitor to participate in the challenge.
The processing of the data for the purpose (iii) is a legal obligation and is carried out based on its necessity for the fulfillment of legal obligations to which ISEC and the Portuguese Blockchain Alliance are subject.
3. Personal data processed for purposes (i), (ii) and (iii) shall be retained for the duration of the challenge and, in addition, for the period of time strictly necessary for the fulfillment of legal obligations.
4. ISEC and the Portuguese Blockchain Alliance may contract third parties to provide logistical support or other administrative support (for example, parties that provide information technology). These parties may have access to personal data to the extent necessary to provide such services.
5. ISEC and the Portuguese Blockchain Alliance as responsible for the treatment ensure the strict compliance with the confidentiality rules regarding the data made available by the participants.
6. The foregoing does not prevent the data subject from exercising his rights of access, rectification, deletion, limitation and opposition to the data treatment by sending an email to info@all2bc.com, proving its identity through its identification document or other suitable means of proof.

XI. Rights of personality
1. The participants hereby authorize ISEC and the Portuguese Blockchain Alliance to use their name and image in the context of their participation in the Challenge, through any means of reproduction, both electronic (Internet and similar) and non-electronic (in paper, photographs and others) for the maximum duration allowed by law.
2. The participants authorize the organizing entity, the Portuguese Blockchain Alliance, and partners to develop audiovisual contents on the participants during the extent of the challenge and for the final conference. All audiovisual contents (photography and video) produced is owned by the Portuguese Blockchain Alliance, the organizing entity.
3. The use and publication of the images and data of the interested party as a winner as set forth in these Regulation, neither generates nor grants repayment, payment of compensation or economic rights of any kind to the winner.

XII. Intellectual property
The ownership of intellectual property rights will, if development and contributions to the proposed solution justify it, is going to be defined by an agreement to be celebrated by both parties concerning the sharing of ownership and the benefits of its commercial exploitation.

ANNEX

Urban Scene Sound Classification
Context

The automatic classification of environmental sound is a growing research field with multiple applications to large scale, content-based multimedia indexing and retrieval. In particular, the sonic analysis of urban environments is the subject of increased interest, partly enabled by multimedia sensor networks, as well as by large quantities of online content depicting urban scenes. However, while there is a large body of research in related areas such as speech, music and bioacoustics, **work on the analysis of urban acoustic environments is relatively scarce**. Furthermore, when existent, it mostly focuses on the classification of auditory scene type, e.g. street, park, as opposed to the **identification of sound sources in those scenes**, e.g. **car horn, engine idling, bird tweet**.

There are primarily two major challenges with urban sound research namely

- **Lack of labeled audio data.** Previous work has focused on audio from carefully produced movies or television tracks from specific environments such as elevators or office spaces and on commercial or proprietary datasets. The large effort involved in manually annotating real-world data means datasets based on field recordings tend to be relatively small (e.g. the event detection dataset of the IEEE AASP Challenge consists of 24 recordings per each of 17 classes).
- **Lack of common vocabulary when working on urban sounds.** This means the classification of sounds into semantic groups may vary from study to study, making it hard to compare results so the objective of this notebook is to address the above two mentioned challenges.

Content

The dataset is called UrbanSound and contains **8732** labeled sound excerpts (<=4s) of urban sounds from 10 classes: - The dataset contains **8732** sound excerpts (<=4s) of urban sounds from 10 classes, namely: **Air Conditioner; Car Horn; Children Playing; Dog bark; Drilling Engine; Idling; Gun Shot; Jackhammer; Siren; and Street Music** The attributes of data are as follows: ID – Unique ID of sound excerpt Class – type of sound

Acknowledgements

Source of the dataset:
https://drive.google.com/drive/folders/0By0bAi7hOBAFUHVXd1JCN3MwTEU

Source of research document:

https://serv.cusp.nyu.edu/projects/urbansounddataset/salamon_urbansound_acmmm14.pdf

Banner image by

@hannynaibaho from Unsplash.