IERE AI 3rd Round Collaboration Project
–Invitation to AI Program Developers–

EPRI & IERE

February 2025

This invitation is identical to the following website.

https://ieee-dataport.org/competitions/iere-ai-3rd-round-collaboration-project

Invitation

Dear AI Program Developer,

IERE has conducted two collaborative research projects in which teams of data providers and program developers have worked together to solve specific problems using AI. These results were shared with all members at the 5th IERE Webinar held in March 2022 and the 7th IERE Webinar held in March 2024.These results are also posted on the following website.
https://www.iere.jp/archives/webinar.html

As a next opportunity, we have changed our previous scheme and planned an effort to solve the problem with different AI programs using a common data set.

EPRI has six different datasets on publicly available electric power facilities. For this reason, EPRI will lead and drive the next project and look for members to work on solving problems in different AI programs.

We will provide an opportunity for non-IERE member program developers to participate and work on a common data set. Results will be made available to participants who are not IERE members.

Datasets of EPRI

EPRI has the following six datasets on electric power facilities
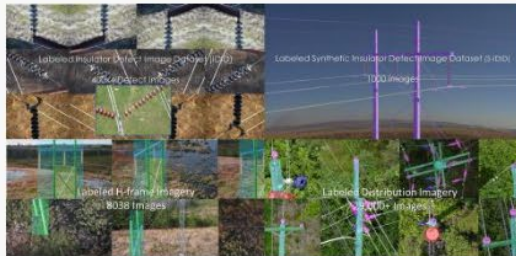
https://www.epri.com/thought-leadership/artificial-intelligence/data-sets/3QmA0kn43RnN56uAlbkMHG

Category A
1. Insulator Defect Image Dataset V1.2
   This dataset contains images of healthy and defective porcelain transmission insulators. These images have been labeled with bounding boxes
2. Synthetic Insulator Defect Image Dataset V1.0
   This dataset contains computer generated images of healthy and defective porcelain transmission insulators. These images have segmented to show the structure, conductor, insulator, and background.

Category B
1. Unlabeled Transmission Defect Imagery V1.0
   Historical defect imagery from comprehensive transmission inspections provided to EPRI, but unlabeled.
2. Distribution Drone with Geospatial Data V2.0
   This dataset contains 421 drone collected images of Distribution infrastructure in a training environment.

Category C
1. Transmission H-frame V1.0
   This dataset contains 12,158 drone collected images of one transmission structure type, an "H-frame" structure type. 11,483 have been labeled and split 8,038 for public training and 3,445 for withheld testing. Additional information about the dataset can be found here, https://www.kaggle.com/competitions/electric-transmission-imagery
2. Unlabeled Transmission Defect Imagery V1.0
   Historical defect imagery from comprehensive transmission inspections provided to EPRI, but unlabeled.

Working Together

Objectives:
- Share international experiences, challenges and know-how among participants
- Application developers tackle problems and develop solutions.
- Improve their experience and knowledge and enhance their skills

Scope:
- Presentations will be made to non-participating members at IERE events. This will be an opportunity for application developers to promote their capabilities and potential to provide data.
- Private presentations will be made among participating members. EPRI will assist in the preparation of the meeting.

Outcome:
- Presentation at IERE Webinar(Results will be shared with non-member participants)
- Presentation at a forum or workshop of IERE

Duration:
- Application period is 1 month (until March 2025).
- Effort period is 6 months (until September 2025).

Answer Sheet (Please respond in a separate Word file.)

Please answer the following items

Company/organization name:

The dataset to be worked on will be determined by EPRI and IERE, but please answer the following questions for reference. Datasets of interest (Multiple answers allowed):

☐ A,   ☐ B,   ☐ C

Involved in the project as a program developer:

☐   Participate in cases of data sets other than those of interest ☐   Participate only if the dataset is of interest to us ☐   not participate

The copyright of the developed program code belongs to the creator (or the organization they belong to). However, would it be possible to upload and share the model on GitHub (or a similar platform) under the Apache 2.0 license?

☐ Yes   ☐ No

Comments: