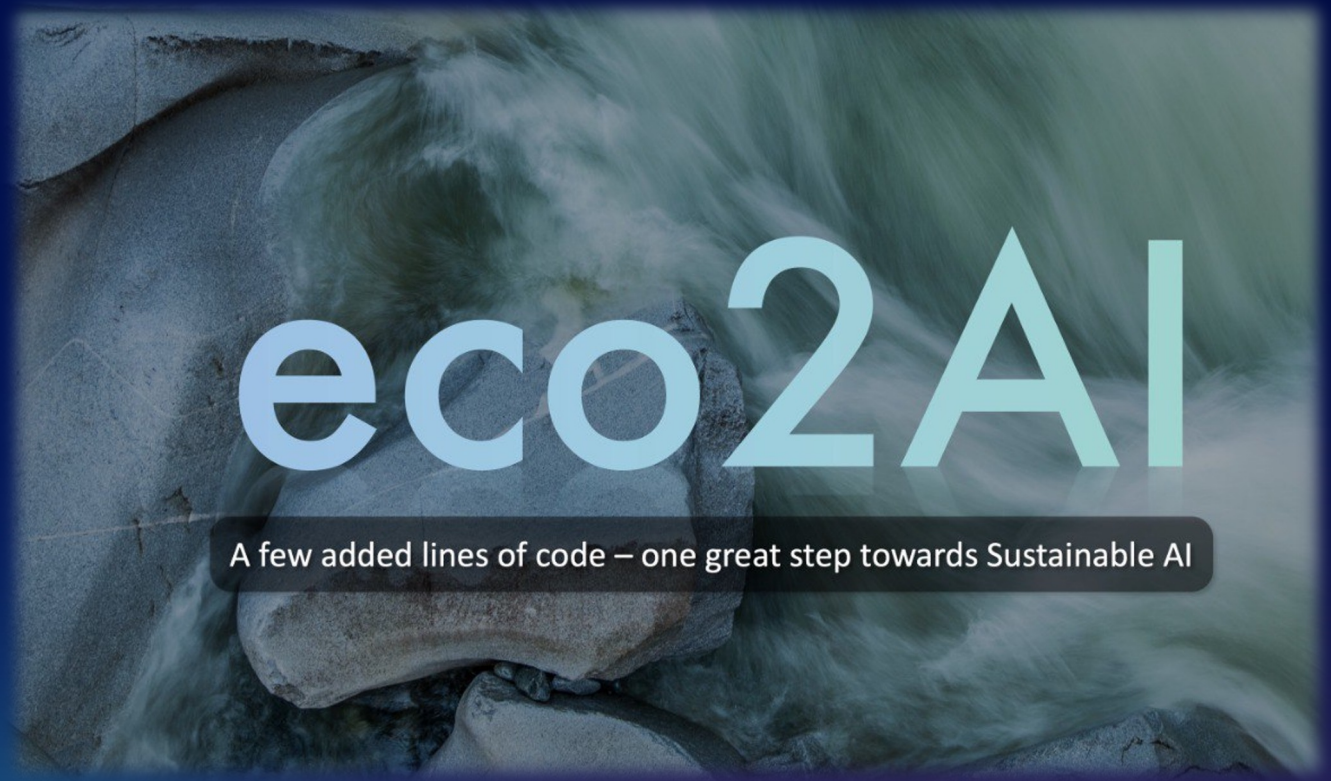
AIJ <contest/>

Special category "The Most Sustainable Solution"

Eco2AI usage

https://github.com/sb-ai-lab/Eco2AI




```
import eco2ai

tracker = eco2ai.Tracker(
    project_name="YourProjectName",
    experiment_description="training <your model> model",
    file_name="emission.csv"
)

tracker.start()
<your gpu &(or) cpu calculations>
tracker.stop()
```

The result format

id	project_name	experiment_description	epoch	start_time
ee6fd4aa-8d40-4d4f-9fd0-2b28ea7e8a4f	CIFAR10 for ESG	Convolutional model test1		2022-09-05 09:01:45
b7f95a75-c6db-40fa-894a-de7547c6052b	CIFAR10 for ESG	Convolutional model test2.		2022-09-05 09:03:49
dd48d3fd-ffdd-4ed2-a590-3337e8a920c2	CIFAR10, testing decorators	simple model		2022-09-05 09:05:38
0392f263-4567-4de0-9357-e69e1ee5f831	mnist for ESG	ML tracking	epoch: 1, loss: 1.743, train_accuracy: 48, test_accuracy: 47,	2022-09-05 09:07:25
0392f263-4567-4de0-9357-e69e1ee5f831	mnist for ESG	ML tracking	epoch: 2, loss: 1.334, train_accuracy: 54, test_accuracy: 53,	2022-09-05 09:09:02
0392f263-4567-4de0-9357-e69e1ee5f831	mnist for ESG	ML tracking	epoch: 3, loss: 1.2, train_accuracy: 61, test_accuracy: 58,	2022-09-05 09:10:44

duration(s)	power_consumption(kWh)	CO2_emissions(kg)	CPU_name	GPU_name	OS	region/country	cost
115.21397566795348	0.0038525188928477	0.0018826027023301	Intel(R) Xeon(R) CPU @ 2.20GHz/1 device(s), TDP:300.0	Tesla T4 1 device(s)	Linux	SG/Singapore	
107.13685369491576	0.0052405364099118	0.0001572160922973	Intel(R) Xeon(R) CPU @ 2.20GHz/1 device(s), TDP:300.0	Tesla T4 1 device(s)	Linux	CA/Ontario	0.7860804614867846
106.03396391868591	0.0035430365354208	0.001731368577691	Intel(R) Xeon(R) CPU @ 2.20GHz/1 device(s), TDP:300.0	Tesla T4 1 device(s)	Linux	SG/Singapore	
97.35244131088255	0.0002508270638631	0.0002006616510905	Intel(R) Xeon(R) CPU @ 2.20GHz/1 device(s), TDP:300.0	Tesla T4 1 device(s)	Linux	AU/Queensland	
101.751455783844	0.0005575831362189	0.0004460665089751	Intel(R) Xeon(R) CPU @ 2.20GHz/1 device(s), TDP:300.0	Tesla T4 1 device(s)	Linux	AU/Queensland	
97.49216794967651	0.00025665450597248633	0.00020532360477798907	Intel(R) Xeon(R) CPU @ 2.20GHz/1 device(s), TDP:300.0	Tesla T4 1 device(s)	Linux	AU/Queensland	nan

How to take part?

- The participant submitted the data (.csv file in encoded format) on CO2 emissions during the model training (using eco2AI)
- The participant sent a free form presentation describing the structure of the respective model and the process of its training, including a part about the CO2 calculation and selection of computing resources, to AIJContest_2022_org@sberbank.ru. The presentation should be sent before 11 November 2022.
- Carefully read the description and technical information of the nomination "The Most Sustainable Solution" on the competition website

Victory conditions

- The solution is in the top by the main metric of the task
- All technical conditions for participation are met
- The model showed the lowest CO2 equivalent emission value, the result was calculated using the Eco2AI library

Components of success in the CO2 metric

- Solution Efficiency
- Power efficiency of GPU and CPU devices
- Region from which computing resources are taken

Pay attention

- Declare the "encode_file" parameter of the Tracker class object
- The key phrase “TargetValue” in the “experiment_description” parameter
- All code needs to be tracked
- In the presentation, it is highly desirable to make a graph of accumulated CO2 from validation loss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Thank you for
your attention