



Prof. Esther Colombini

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PEDs

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Final Project - Deadline: 18/07/2021

In 2015, 195 nations agreed with the United Nations that they could change the world for the better. This will be accomplished by bringing together their respective governments, businesses, media, institutions of higher education, and local NGOs to improve the lives of the people in their country by the year 2030. The Sustainable Development Goals are a global call to action to end poverty, protect the environment and the climate, and ensure that people everywhere can enjoy peace and prosperity. These goals are (<https://brasil.un.org/pt-br/sdgs>):



1. Eliminate Poverty
2. Erase Hunger
3. Establish Good Health and Well-Being
4. Provide Quality Education
5. Enforce Gender Equality
6. Improve Clean Water and Sanitation
7. Grow Affordable and Clean Energy
8. Create Decent Work and Economic Growth
9. Increase Industry, Innovation, and Infrastructure

10. Reduce Inequality
11. Mobilize Sustainable Cities and Communities
12. Influence Responsible Consumption and Production
13. Organize Climate Action
14. Develop Life Below Water
15. Advance Life On Land
16. Guarantee Peace, Justice, and Strong Institutions
17. Build Partnerships for the Goals

1 Project Goal

This work aims to build a **Machine Learning** system to solve a problem chosen by the group inserted into one of ONU's Sustainable Development Goals (SDG). Your group's job is to find a suitable solution to the chosen problem. The project must contain:

- What problem is being investigated
- A clear motivation for your project and in which (or more) SDG it is contextualized
- How your project is contributing to advancing towards helping to achieve one of the SDGs
- A description of the model (for example, the network architecture) employed and why it is suitable for your problem
- The methodology employed
- The results achieved along with a critical discussion
- Implementation specifics and restrictions
- The list of responsibilities and the level of participation of each member of the group in the final project

The system must be evaluated according to the quality of the solutions found, and a critical evaluation is expected on the relationship between the choices made x quality of the solution. Graphs and tables representing the results of the solutions are expected. Additional comparisons with the literature are welcome, although they are not mandatory. Any libraries or prior implementations used must be clearly stated in the text.

2 Group

The project must be carried out by groups of 4 students.

3 Programming language

The project must be written in Python.

4 Report, Video, Code and Submission

The problem definition, the solution, and the results obtained must be presented in a report with a maximum of 10 pages. The report template is available in the discipline's classroom and should be used by the group.

The groups should prepare a video of a maximum of 5 minutes describing the problem addressed, the solution employed, and the most significant results achieved. You should upload the video on Youtube and put a link to it in the report.

Some nice videos examples can be seen in

- https://www.youtube.com/playlist?list=PLyDEZrrEqytgp_bdyMeUk57Y3q3GpACFpr
- <https://www.youtube.com/watch?v=TsGy02-KbHI&list=PLyDEZrrEqytipvIEY3TpPtnkFW71enOL9>

The reports and code must be submitted in a zip file following the nomenclature:

<RAmenor>_<RAmaior>.zip

Example for a group whose members have RAs 166666, 175480 and 201234. The name of the submission would be:
166666_175480_201234.zip

5 Dates

- Final Project (*PF*):
 - *PF* Submission deadline: 19/07/2021

6 Grading

This work will be evaluated according to the following criteria:

- Submission within deadline
- Quality of the solution employed
- Alignment with the proposed SDG
- Report and discussions
- Video analysis
- Code analysis
- Individual student participation in the project

6.1 Penalty policy for late submission

You are not encouraged to submit your assignment after the due date. However, in case you did, your grade will be penalized as follows:

- late submission one day after the deadline: grade * 0.75
- late submission two days after the deadline: grade * 0.5

No submissions will be graded after two days past the deadline.