Software Delivery Sheet - PER2024-030

Title: Fairness in Machine Learning Models (Type: Research)

1. Identification

Students:

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Delivery date: 24 February 2025

Software name: **FairnessLens** / Version: 1.0 (beta)

2. Description of the software delivered

The **FairnessLens** is a Jupyter Notebook-based software (serving on Mercury) designed to empower users in the evaluation and mitigation of fairness concerns within datasets. This toolkit provides a user-friendly interface to:

- Upload and pre-process CSV datasets on an interactive and easy-to-understand web-based interface.
- Designate sensitive, prediction and other relevant attributes within the dataset.
- Automatically calculate key fairness metrics, including Demographic / Statistical Parity, Correlations to the prediction outcome, Equality of Odds (TPR, FPR) and Equal Opportunity (TPR).
- Visualize these metrics through interactive charts and plots, facilitating easy identification of potential biases.
- Access actionable recommendations for applying pre-processing and post-processing techniques to mitigate identified biases.
- Ability to export analysis results as a comprehensive fairness report for auditing and compliance purposes.

Documentation relating to this software includes: scientific research paper, A2 poster, software delivery sheet, which details the methodology, solution and evaluation of the toolkit and separate installation and execution instructions (see below).

3. Method of delivery

The **FairnessLens** is delivered via a public GitHub repository located at https://github.com/Bence749/FairnessLens

The repository contains:

- The Jupyter Notebook (.ipynb) file containing the **FairnessLens** software.
- A README.md file with detailed installation and execution instructions.
- A requirements.txt file listing the necessary Python packages and their versions.
- Scientific research paper in LaTex (.tex) and PDF format and A2 size poster (.pdf)
- Sample datasets for testing and demonstration purposes.

No password is required to access the repository. Simply clone the repository to your local machine using the following command in GitHub CLI: *gh repo clone Bence749/FairnessLens*

4. Intellectual property / Exploitation rights

The students acknowledge that the results of the research conducted within the framework of the PER as well as the software delivered resulting from this work, whether patentable or not, are subject to the rights of any third parties, the property of the supervisors who proposed the PER subject.

Consequently, the students undertake not to exploit for their own account or that of a third party, unless expressly agreed by the supervisors the results as defined above.

In return, the supervisors undertake to inform the students of the uses and exploitation of the results as defined above.

Date: Biot, 24 February 2025

Signatures

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