AirUI Project Proposal Pushback Document

Framing

Goal: Enumerate our response to feedback and mark deductions on the project proposal.

Request: We request an additional 5.5 marks for the project proposal document and an additional 1 mark for the presentation, bringing our totals to

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Individual Responses

[Background] "Should use proper references, not just weblinks." (-0.5)

- The reference criterion was not stated in the assignment sheet.
- Course material (assignments, lecture notes, etc.) have not included ‘proper references’ up to this point -- it is unclear from where this expectation was meant to be inferred.

[Data Source, Labelling Processing] "How much labelled data will you need? Suggest you create a plan where each volunteer/person goes through a specific sequence, like Assign 4 part 1; suggest also that all processing be used early on, again, don't change too many things at once, just one at a time." (-1)

- The amount of data required for this is fundamentally unknown at this point.
    - Assignment documentation did not require any estimates on this.
- The plan was outlined in both the report and in the video (i.e. metronome + instructional video for recording sounds).
- Overall, it is unclear what the ‘-1’ marks corresponds to in the rubric.
- In response to the final point on *not changing too many things at once*:
    - While this makes sense if one regards this as a scientific experiment (i.e. independent variable is which model is used), this is an engineering project.
    - Prototypes, particularly those that take less than 90 minutes to create start to finish, are frequently of use as proof-of-concepts and for generating boilerplate code for use later on.
    - It took ~5 minutes to generate a dataset with over 300 training samples, then another 45 minutes to write the signal processing algorithms for the baseline

model and train an MLP with the results shown in this Jupyter Notebook (also in our project repository): https://nbviewer.jupyter.org/gist/amanb2000/5f3ae1376607da3135f8caa4d4ad3513

    - I hope that the utility of prototyping (and changing input data at the same time as the model) is made clear by this.
- Since this is a relatively straight forward signal processing and classification task, we increase our chances of satisfying our ethical concerns relating to data quality, model performance, and model latency when we attempt multiple models and continue to expand and diversify our datasets.

[Architecture] "OK, a list of approaches without insight; better to give at least justification; why also talking about baseline here?" (-0.5)

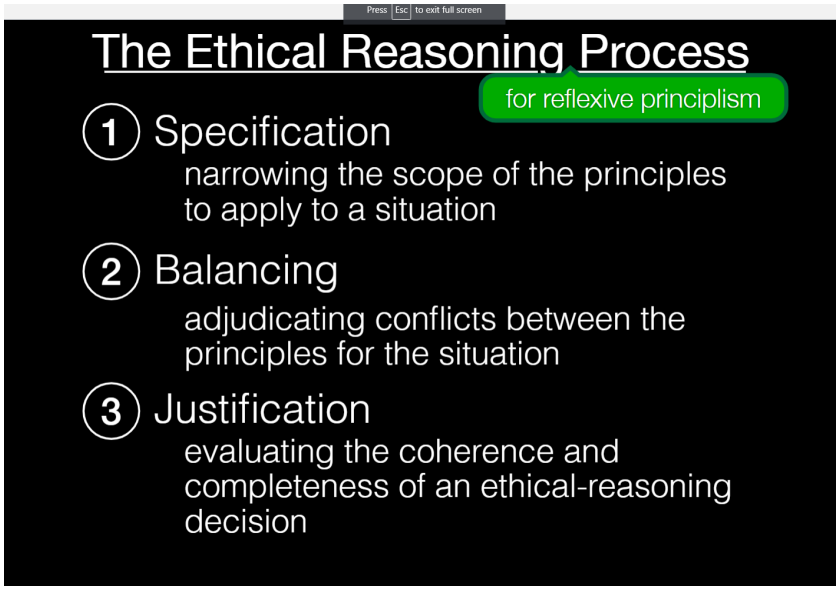
- 'Insight' or rationale for the baseline models is not part of the proposal document rubric.
- The rubric requests a **description** -- I am unclear on where we were supposed to infer the requirement of providing 'insight'?
- Baseline was included in the section because it is one of the "type(s) of neural network models that [we] plan to use" requested in the rubric.

[Baseline] "should just pick one baseline and focus on it; would need some thought on how to process picture with each of these algorithms" (-0.5)

- Multiple baseline models are useful in signal processing and classification projects as they can assist in clarifying the decision boundary (e.g. KNN performance indicates Euclidian distance as a useful measure).
- It can also help to guard against the risk of selecting poorly trained model (much higher logistic regression accuracy indicates a poorly trained MLP).
- The risk-reward characteristics of selecting multiple low-level classifiers as baselines is often quite favourable, particularly with libraries like Scipy where the exchange of different models is often as simple as changing a line or two of code.

[Ethical Framework] Ethics paragraph does not use framework. Justice for poor microphones does not make sense. Need to select stakeholders first then ask how 4 principles apply to each. (-2)

- We based our approach on our ESC201 -- Ethics course where Prof. Irish presented reflexive principlism.



- It was specifically stated that we ought to **narrow the scope of the principles** to apply them to the situation (something we practiced at length in our ethics tutorials, too).

[Risk] "... low accuracy is not a risk, it is the opposite of the objective" (-1)

- We are confused as to why the inclusion of literal failure to actualize the project objective is not a risk.
- Further, I am unclear as to why this inclusion corresponded to 25% of the potential marks for this section being deducted. Was the mitigation strategy for this risk also incorrect given the idea that it could be one?

[Presentation > Coherence/Quality] “Too long, but otherwise quite good” (-1)

- Timed from when we began speaking, our last speaker’s timer still had ~10 seconds left to wrap up when the time was called.
- Would you be able to share our proposal recording so that we can determine the validity of the claim? If validated, we request one additional mark for our presentation.