Kutay Eroğlu

Project Title: **Predict the price of airline ticket prices given day, time, location, etc.**

Project Description: **You will build a system to solve a well-defined task. Which task you choose is completely open-ended, but the methods you use should draw on the ones from the course. You may use Open source datasets such as Kaggle competition. You should write a report in an IEEE paper format in LateX. The length of the paper should be min of 15 pages and max of 20 pages excluding references. The paper should have the following sections:**

- **Introduction** - Brief overview of your problem. Why might this problem be important?
- **Literature Review** - Description of other work/papers you've found that are related to your task. Just mentioning a paper is not sufficient; you should at least go into brief detail about what kind of approach they are using/how it relates to your work if it's not immediately clear. Please also mention why your work relates or differs from these related works.
- **Dataset** - Description of data you are using - size of dataset, distribution of classes, any preprocessing you needed to do
- **Baseline** - Description and implementation of your baseline. For this report, you don't need to go too much into detail, but please still include some details.
- **Main Approach** - Propose a model and an algorithm for tackling your task. You should describe the model and algorithm in detail and use a concrete example to demonstrate how the model and algorithm work. Don't describe methods in general; describe precisely how they apply to your problem (what are the inputs/outputs, variables, factors, states, etc.)?
- **Evaluation Metric** - Please include what metrics, both qualitative and quantitative, you are using to evaluate the success of your problem. If relevant please include equations to describe your metrics.
- **Results & Analysis** - Please include the performance of your baseline as well as the performance of your main approach so far and any experiments that you have run. Also, include an analysis of your results, and how this might inform your next steps in fine-tuning your main approach. The analysis is very important, and it requires you to think about what your results might mean.
- **Error Analysis** - Describe a few experiments that you ran that show the properties (both pros and cons) of your system. Analyze the data and show either graphs or tables to illustrate your point.What's the take-away message? Were there any surprises? Use these experiments in the error analysis to describe potential errors in the method and why they may have occurred.

- **Future Work** - This section can be short, but please include some ideas about how you could improve your model if you had more time. This can also include any challenges you're running into and how you might fix it.
- **Ethical Considerations** - Provide a 1-2 paragraph statement outlining at least one ethical issue or societal risk specific to your project, with an explanation of what in particular connects your project to the ethical issue(s) or societal risk(s) raised. Subsequently, you also need to explain at least 1 possible mitigation strategy for each of those issues (e.g. technical modifications, policy changes, or specific model deployment measures). Note that you are not required to implement these mitigation strategies.
- **Code** - Please include a link to your Github.
- **References** - Please include a reference section with properly formatted citations.

The deliverables:

1. Paper: please send a pdf and also share the Overleaf link
2. Code and Data: please share the GitHub link

Deadline: Jan 15, 2025 until 11:59PM by email.