CREATING A PLAYER AID FOR GEOMETRY DASH APS360 PROGRESS REPORT

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ABSTRACT

Our team intends to create a program that can create semantic segmentation maps of a Geometry Dash Level using machine learning. This program can be used to assist players in recognizing obstacles without the usage of mods. We are using transfer learning to achieve this task. —-Total Pages: 2

1 BRIEF PROJECT DESCRIPTION

The format for the submissions is a variant of the ICLR 2022 format. Please read carefully the instructions below, and follow them faithfully. There is a **9 page** limit for the main text. References do not have any limitation. This is also ICLR's standard length for a paper submission. If your main text goes to page 10, a -20% penalty would be applied. If your main text goes to page 11, you will not receive any grade for your submission.

2 INDIVIDUAL CONTRIBUTIONS AND RESPONSIBILITIES

Table 1: Individual Contributions

NAME	CONTRIBUTIONS	RESPONSIBILITIES
Jaden Dai	Did most of the data collection, including creating macros for Geometry Dash levels, creating texture packs, and creating macros for taking screenshots.	Will continue to help with data collection and trying out different architectures.
Joel Vadakken	Helped with the data collection. Wrote the code to preprocess the data before training the model.	Will continue to help with hyperparameter tuning and data collection.
Skylar Han	Created the Baseline model for comparison. Wrote the training code for the model.	Will continue to look at hyperparameter tuning and improving the baseline model.
Ian Lu	Created the architecture for the model, and did some hyperparameter tuning.	Will continue to help with hyperparameter tuning.

3 DATA PROCESSING

4 BASELINE MODEL

In an attempt to encourage standardized notation, we have included the notation file from the textbook, *Deep Learning* Goodfellow et al. (2016) available at `https://github.com/goodfeli/dlbook_notation/`. Use of this style is not required and can be disabled by commenting out `math_commands.tex`.

5 PRIMARY MODEL

Do not change any aspects of the formatting parameters in the style files. In particular, do not modify the width or length of the rectangle the text should fit into, and do not change font sizes (except perhaps in the REFERENCES section; see below). Please note that pages should be numbered.

REFERENCES

Ian Goodfellow, Yoshua Bengio, Aaron Courville, and Yoshua Bengio. *Deep learning*, volume 1. MIT Press, 2016.