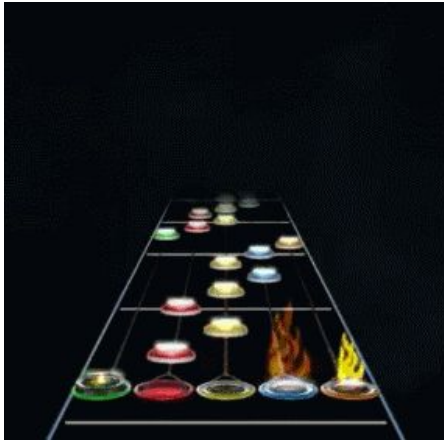




Beatabel

rhythmic classification

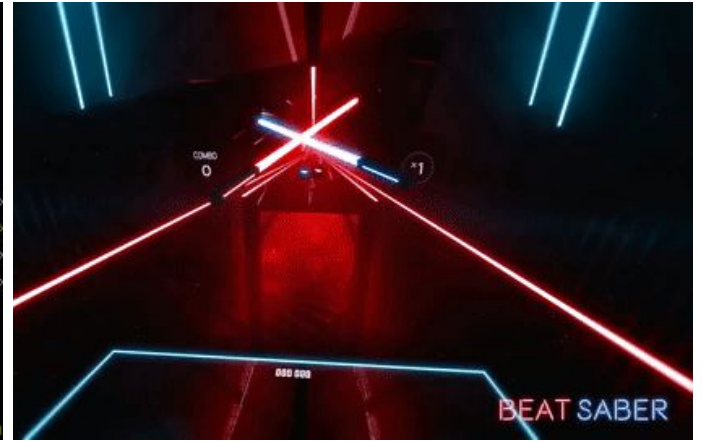
Idea/Principle



Guitar Hero, 2005



Osu!, 2007



Beat Saber, 2018

Key Points

✗ predefined notes/inputs ----- ✓ subdivision of pictures

→ **oversimplify** the classification task!

✗ score user on labeling ----- ✓ score user on timing

→ game becomes **independent** from ML model!

✗ predefined content (songs/stages) ---- ✓ auto generate using bpm to **simulate rhythm**

→ **difficulty** and **tone** set upon song selection!

! up to thousands of interactions in minutes → reconstruction of the images yields label data

Datasets, ML task

- ✓ game is (or can be) independent from the task
 - at its core, the tasks require the user to point to relevant areas in an image
 - if the separation is binary, it's easy. If it isn't, then the task can be split into multiple binary tasks, and then combined into one
- ✓ focus on **segmentation** (instanced or semantic)
 - subdivided images can be put back together after playing sessions (along with the labels)
 - for development we will use the maps dataset

Milestones/Schedule

- ✓ (16/4) -----> formulate an idea that solves the task
- ✓ (9/5) -----> setup environment and play around with the tutorials (Unreal Engine and Unity)
- ✓ (30/5) -----> basic version (proof of concept)
 - game core, models and graphics
 - in-game file handling and user interaction
- ! (20/6) -----> better version (playable game)
 - game menu, scoring system and resources
 - automatic beat generation from audio file
- ! (11/7) -----> cool version (nice game)
 - user session and file system implementation
 - integration with ML framework if needed
- ! (?) -----> implemented Abel and refined details for submission, presentation

Responsibilities

Julián → team admin, game in Unreal, audio handling

Soorya → user interaction, API

Mihail → game in Unity

Simon → user interaction

→ everyone can work on any task!

→ subject to change

Thank you!

Questions, suggestions, complaints?