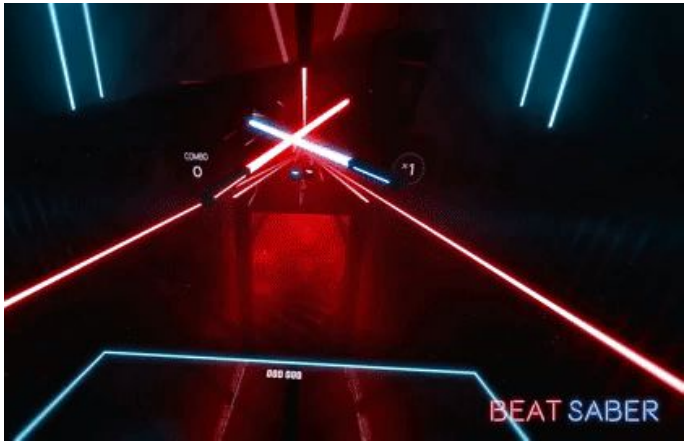
Beatabel

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) ----> have a badass idea

✔️ (9/5) ------> setup environment and play around with the tutorials (Unreal Engine and Unity)

! (30/5) -----> working first version

-game core, 3D models, parameterized beat

-beat objects and user interaction

! (20/6) -----> implemented most

-the image division and reconstruction into beat objects

-automatic beat generation from an audio file

! (11/7) -----> finished

-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 core and objects
Soorya	→ gameplay, user interaction, image import
Mihail	→ gameplay, beat generation, label export
Simon	→ file system, user sessions, ML integration

→ everyone can work on any of the stages!

→ subject to change

Thank you!

Questions, suggestions, complaints?