

# Advancements in EEG Denoising and Artifact Removal using Transformers



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# EEG

- EEG stands for Electroencephalography
- It is a non-invasive technique used to record the electrical activity of the brain
- It measures voltage fluctuations resulting from ionic current flows within the neurons of the brain
- It is widely used in neuroscience for diagnosing and monitoring brain disorders and brain injuries

# Noise

Developed in 2015 by Facebook's researches, Faster-RCNN is still today an industry standard thanks to it's accuracy and performance, getting a step closer to real time object detection

Figure: Faster-RCNN architecture.

# Objective

Minecraft has several desirable qualities:

- Simple graphics.
- Sandbox.
- Available to every team member.
- Distinguishable entity silhouettes.

Figure: A Minecraft promotional image.

# Approaches

4000 images spread across 40 videos!

How did we collect these videos?

- 1 minute long (circa).
- As many biomes as possible.
- One mob per video (except test).

**Figure:** A representative chunk of our dataset

# Problems

# Model

# Architecture



# Architecture

# Comparison

# Results

# Conclusions

# Greetings