Neuralink Compression Challenge

content.neuralink.com/compression-challenge/data.zip is **one hour of raw electrode recordings** from a Neuralink implant.

This Neuralink is implanted in the **motor cortex of a non-human primate**, and recordings were made while playing a video game, like this.

Compression is essential: N1 implant generates ~200Mbps of eletrode data (1024 electrodes @ 20kHz, 10b resolution) and can transmit ~1Mbps wirelessly.
So > 200x compression is needed.
Compression must run in **real time** (< 1ms) at **low power** (< 10mW, including radio).

Neuralink is looking for new approaches to this compression problem, and exceptional engineers to work on it. If you have a solution, email compression@neuralink.com

Leaderboard

Name	Compression ratio	Compressed size	./encode size	./decode size
zip	**2.2**	**63M**	**231K**	**480K**

Task

Build executables `./encode` and `./decode` which pass eval.sh. This verifies compression is lossless and measures compression ratio.

Your submission will be scored on the compression ratio it achieves on a different set of electrode recordings. Bonus points for optimizing latency and power efficiency

Submit with source code and build script. Should at least build on Linux.

Data

```
$ ls -lah data/
total 143M
193K 0052503c-2849-4f41-ab51-db382103690c.wav
193K 006c6dd6-d91e-419c-9836-c3f320da4f25.wav
...
```

- Uncompressed monochannel WAV files.
- 5 seconds per file.