Best of Last Week—Learning more about a quasar, generating video from brain waves, inducing torpor in rats and mice

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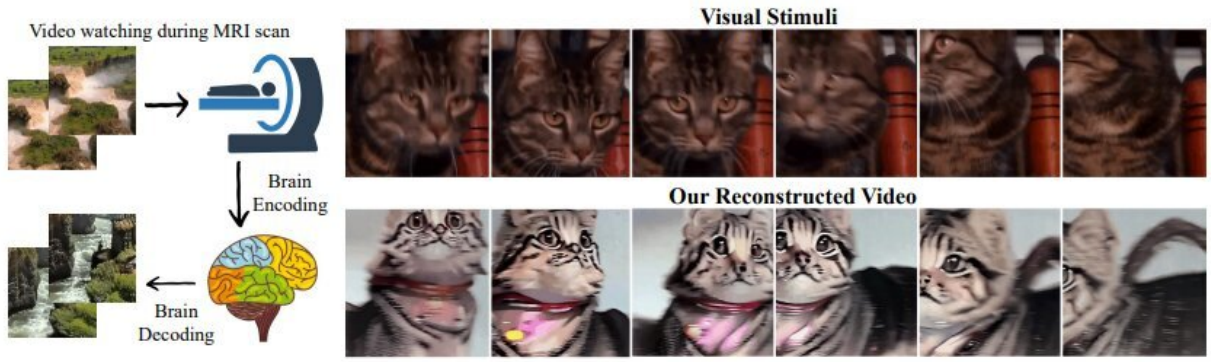

Brain decoding & video reconstruction. We propose a progressive learning approach to recover continuous visual experience from fMRI. High-quality videos with accurate semantics and motions are reconstructed. Credit: *arXiv* (2023). DOI: 10.48550/arxiv.2305.11675

It was a good week for space science as an international team of researchers learned more about the properties of a recently discovered luminous quasar—called J1144, the quasi-stellar object has a bolometric luminosity of about 470 quattuordecillion erg/s. Also, a group called the JENSA Collaboration created an element in their lab that has deepened the understanding of surface explosions on neutron stars. Their findings have improved the understanding of stellar processes that generate

diverse nuclear isotopes. And a pair of social scientists at the University of Louisville, working with a colleague from the University of Virginia, found via survey that 19% of respondents to an academic survey reported that they or someone they knew had witnessed an unidentified aerial phenomena—13% of them attributed the sightings to devices of unknown intelligence.

In technology news, a team of engineers at the University of Massachusetts Amherst found a way to harvest abundant clean energy from thin air, 24/7. And a combined team with members from the National University of Singapore and the Chinese University of Hong Kong created an AI tool that can generate video from brain activity obtained by scans. Also, a team at Delft University of Technology developed a new approach for map densification in visual place recognition, improving the ability of such applications to pinpoint the geographic location of objects that appear in photographs. And a combined team from Zhejiang University and Tencent Labs successfully bypassed fingerprint authentication safeguards on a smartphone by staging a brute force attack.

In other news, a team with members affiliated with institutions across the U.S. found that sudden infant death syndrome may have a biologic cause. They found an altered serotonin 2A/C receptor in babies that had died from SIDS compared to control cases. Also, a pair of sociologists, one with the University of Milan-Bicocca, the other with the Climate Accountability Institute, calculated the amount companies owe for causing global warming—the largest amount was $43 billion annually for Saudi Aramco. And finally, a team at Washington University in St. Louis used ultrasound to safely and noninvasively induce a torpor-like state in mice and rats—only mice go into such a state naturally.