

Data tool helps decipher mouse's calls

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Technology that can help interpret inaudible calls from laboratory mice has been developed in a bid to improve research.

The [computer tool](#) can reveal valuable insights into rodents' communication patterns and is more reliable than existing methods,

which rely on human interpretation.

Crucial role

The system analyses audio recordings of ultrasonic vocalizations—beyond the range of human hearing. Researchers say it could support research involving mice, which play a crucial role in testing new therapies for human diseases.

Monitoring rodent communications can reveal [important information](#) about how diseases progress, particularly for neurological disorders such as Parkinson's disease and autism.

Mouse communications

Experts previously categorized mouse communications into nine call types by manually deciphering visual representations of the soundwaves, known as spectrograms.

Researchers have now developed an automated tool that can accurately extract characteristics of the ultrasonic vocalizations to determine these different types of sounds.

The new approach used machine learning techniques to make analysis faster, more reliable, and less subjective than human interpretation, the researchers say.

It will standardize interpretations of mouse communication, helping researchers to directly compare their results between labs, types of mice, and over time, they add.

"We developed a fully [automated system](#) that uses [signal processing](#) and

statistical machine learning techniques to extract a range of diverse patterns from rodents' ultrasonic vocalizations. We then mapped those patterns onto the widely accepted types of vocalizations that experts understand. We hope these tools may find further use in animal model studies investigating, for example, the effect of neurological effects on communication patterns," says Dr. Athanasios Tsana of the University of Edinburgh's Usher Institute.

Provided by University of Edinburgh

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