"'PrivacyMic': For a Smart Speaker That Doesn't Eavesdrop"

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One of the challenges associated with smart home systems is that they are always on and listening. This raises privacy concerns because such systems could be streaming all of a user's audio back to some servers that could be used for anything, including malicious activities. A team of U-M researchers wanted to develop ways to use the functionality of smart speakers without private conversations being recorded. They have developed a device called PrivacyMic that can be used to inform a smart home or listen for the signal that would activate a smart speaker without eavesdropping on audible sound. Ultrasonic sound at frequencies higher than the range of human hearing is the key element of PrivacyMic. Computer monitors, running dishwashers, and finger snaps generate ultrasonic sounds with a frequency of 20 kilohertz or higher. Humans cannot hear them, but PrivacyMic, along with dogs and cats, can. The PrivacyMic system combines the ultrasonic information surrounding us to identify when its services are needed as well as sense what is happening around it. According to the researchers, PrivacyMic can identify household and office activities at an accuracy rate higher than 95 percent. There are many situations in which users want their home automation system or smart speaker to understand what is happening in their home but do not want their conversations to be recorded. The researchers found that it is possible to have a system that can understand what is happening while ensuring that it will not record audible information. PrivacyMic can filter out audible information on the device, making it more secure than encryption or other security measures that take actions to protect audio data after it has been recorded or limit who has access to it. These measures could leave sensitive information vulnerable to hackers, but PrivacyMic ensures that the information does not exist. This article continues to discuss how PrivacyMic offers another layer of privacy for users.

[The University of Michigan reports "'PrivacyMic': For a Smart Speaker That Doesn't Eavesdrop"](#)