

# Music Technology Researchers Create New Robotic Percussionist

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(PhysOrg.com) -- Georgia Tech has created an improved version of the robotic percussionist. The second edition, named Shimon, is designed to play a melodic instrument – the marimba. It, therefore, utilizes more sophisticated algorithms for music perception and improvisation in comparison to Haile, Georgia Tech's first robotic drummer. The robot can also create richer sound and more communicative visual cues.

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Video is available [here](#)

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“There is really a back channel of social cues that go on between musicians,” said Andrea Thomaz, assistant professor in the School of Interactive Computing, who is collaborating with Weinberg on building the robot’s head. “Shimon’s head is really meant to take Gil’s robotic musicians into that realm of being a true social collaborative music partner.”

“When a guitar player and a drummer want to finish a piece together, there are synchronization and anticipation social cues given,” said Weinberg. “With Shimon, there are four arms that stretch over a large instrument that give other musicians anticipatory cues of what is going to happen next.”

Shimon is able to interact with the environment around it, analyze rhythm, melodies and harmony and use his musical understanding to improvise with humans.

Weinberg says that it can help study the way we think and play music because it expands the knowledge we have about music making and the musical mind.

Haile, Weinberg's first robotic percussionist, played in venues all around the world and has led to additional research in human-robotic interaction. The Robotic Musicianship project, which led to the development of Shimon, was supported by NSF and by the GVU Research Innovation grant.

Provided by Georgia Institute of Technology

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