A Northeastern undergraduate turns timekeeping into music

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Robby Grodin (right) and Ron Smith (left) test out a system that creates music through gestures Photo: Mary Knox Merrill

Shop for a new wristwatch these days, and you'll find the latest models souped up with technologies like GPS capabilities and solar-powered batteries. Now, thanks to a Northeastern undergraduate and a freelance software developer, you could own a watch that translates your movements into music.

The technology was developed by Northeastern computer science and music technology dual major Robby Grodin and freelance software developer Lindsey Mysse at the recent Boston Music Hack Day, one of a series of music technology innovation events held in cities around the world. Grodin and Mysse's application interprets the wearer's movements using the music programming language Max/MSP. They dubbed it the Toscanini Gestural Interface and made it available for free

download on their website.

Here's how it works: Existing parts of the watch called accelerometers communicate the movements to a computer using musical data signals called MIDI, or Musical Instrument Digital Interface. Grodin and Mysses's application—Toscanani— then translates the signals into music that plays on your computer.

Ron Smith, an associate professor of music technology in Northeastern's College of Arts, Media and Design, teaches interactive real-time performance, where Grodin honed his music technology skills. Smith also served as Grodin's mentor during Music Hack Day.

He noted that while "the history of using gadgets in this way goes back several decades, the gadgets themselves tended to be more cumbersome to use." But with "novel innovations like this watch, they are now becoming more and more portable."

Right now the watch requires that you figure out what motions create which notes as you go along, but Grodin hopes his creation will continue to evolve. He also hopes it will serve as a gateway into the niche industry of music software development. He and Mysse plan to manufacture a chip that could be used on the end of a violin bow or on a pianist's hands, or that could be integrated into performance art or even the motions you make while driving a car.

"The possibilities, we think are endless," Grodin said. "We wanted this to be a very open-ended project that allows the users to come with their own way of interpreting its use."

Provided by Northeastern University