

# Extracting Human Expression with Motion Sensors

Mari Kimura

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# Short Audio/Visual Demonstrations

# Using IRCAM's MO sensor for performance 2010-2015

The New York Times | International Herald Tribune GLOBAL EDITION  
**Music**

WORLD U.S. N.Y. / REGION BUSINESS TECHNOLOGY SCIENCE HEALTH SPORTS  
ART & DESIGN BOOKS DANCE MOVIES MUSIC TELEVISION

## For a Violinist, Success Means a New Low Point




Librado Romero/The New York Times

Violinist Mari Kimura wearing a glove with electrodes that monitor the angle and speed of her bowing arm.

By MATTHEW GUREWITSCH  
Published: May 13, 2011

The New York Times May 15, 2011



Librado Romero/The New York Times  
 RECOMMEND

A closer look at the equipment violinist Mari Kimura uses that monitor the angle and speed of her bowing arm.

“Mini-MO”, the smallest of the MO-family, housed in a custom-fit glove, not intrusive for violinist. The glove designed by Mark Salinas.

# Artistic Presentations 2010-

## SCIENTIFIC AMERICAN™

Permanent Address: <http://www.scientificamerican.com/article.cfm?id=kimura-augmented-violin-subharmonics>

### String Theory: Violinist Taps Artificial Intelligence to Interact with Her Unique Sound [Video]

"Subharmonics" innovator [Mari Kimura](#) connects herself with a computer using a wireless, fingerless glove that meticulously tracks bow strokes to get to the root of expression

By Larry Greenemeier | Tuesday, May 31, 2011 | 1

Halfway into a recent performance at New York City's [Bohemian National Hall](#) violinist [Mari Kimura](#) had already performed "Preludio" from Bach's [Partita No. 3 in E Major](#) followed by several pieces in which she deftly demonstrated her innovative "[subharmonics](#)" techniques for extending the octave range of her instrument. Then things got really interesting.

Kimura donned a white fingerless glove laden with wireless sensors, plugged her "augmented" violin into her laptop onstage, and proceeded to demonstrate how she is redefining the relationship musicians have with both their instruments and their music. After a few moments setting up her interactive bowing technology Kimura launched into her composition *Voyage Apollonian*, during which her bow strokes controlled an animation sequence created by New York University computer science professor [Ken Perlin](#). As she played, the glove's sensors sent data to software running on her laptop, prompting a black-and-white butterfly on the large screen behind her to morph into various shapes and patterns before returning to its original winged configuration.



**MARI KIMURA:** The violinist displayed her knack for experimentation during a May 20 show sponsored by the Vilcek Foundation at New York City's Bohemian National Hall. On her right bow hand she wore a white fingerless glove laden with sensors that let her communicate wirelessly with her laptop as she played.

Image: COURTESY OF THE VILCEK FOUNDATION

# “ImproTech Paris-New York 2012”

## A.I. based improvisation system

### Organized by IRCAM, Pompidou Centre, Paris

#### ImproTech Paris-New York 2012 : Improvisation & Technology

Conferences, Workshops & Performances :: May 16-18, 2012 in New York City



May 16th: **Concert at Roulette**, 8:30 pm

May 17th: NYU (Steinhardt), **lectures/demo/performances**, 9:30-6pm

May 18th: Columbia (Prentis Hall) **lectures/demo/performances**, 9:30-6pm

May 18th: Columbia (Prentis Hall), **Concert**, 8pm

The **ImproTech Paris - NYC 2012** workshop is dedicated to the exploration of the links between musical **improvisation** and digital **technologies**.

Gathering researchers and artists from both research & creation scenes, it favors the idea of using **digital intelligence** as a source of continuous and sophisticated **creation**, in a **complex interaction** with live musicians, as opposed to mere decorative digital effects.

Distributed over 3 sites (**Roulette, NYU, Columbia**) the event combines concerts, presentations, demos and workshops and features such great artists as Roscoe Mitchell, Steve Coleman, George Lewis, Geri Allen, Bernard Lubat, Margaret Lancaster, Steve Lehman, Vijay Iyer, Mari Kimura, Esther Lamneck, Raphael Imbert, Lori Freedman, Brice Martin, Laurent Mariusse, Sylvain Roux, Les Emeudroïdes and many others (see the [List of participants](#) and the [Events Schedule](#).)

Complete Info at : <http://repmus.ircam.fr/improtechpny>

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# ***ImproTech Paris-New York 2012***

**Vijay Iyer, Steve Lehman, Mari Kimura Trio**



**Interactive Improvisation using  
A.I. -based OMAX with MO sensor**

**Roulette, Brooklyn May 16, 2012**

# Collaboration with IRCAM, Paris


1st prize winner of Guthman Competition, “MO” is displayed at “Talk To Me” exhibition at MoMA in 2010

CREATE DIGITAL **MUSIC** **MOTION**

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**What Makes a Truly New Instrument? Human Gestures Power Winners of Guthman Competition** MAR 21 2011

BY PETER KIRN



Georgia Institute of Technology

## MoMA Presents Talk to Me: Design... between People and Objects

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Tuesday, July 12, 2011; Posted: 01:07 PM - by [BWW News Desk](#)

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The Museum of Modern Art presents Talk to Me: Design and the Communication between People and Objects from July 24 to November 7, 2011. With nearly 200 projects ranging from the microscopic to the cosmic and all designed in the past few years or currently under development, the exhibition explores design's new terrain: enhancing communicative possibilities, embodying a new balance between technology and people, and bringing technological breakthroughs to an approachable, human scale. These projects include interfaces, websites, video games, tools, charts, and information systems on topics global and local, public and personal. The exhibition is organized by Paola Antonelli, Senior Curator, and Kate Carmody, Curatorial Assistant, Department of Architecture and Design, The Museum of Modern Art.

Whether openly and actively or in subtle, emotional, or subliminal ways, objects talk to people. As the purpose of design has, in past decades, shifted away from mere utility toward meaning and communication, objects that were once charged only with being elegant and functional now need to have personalities. Thanks to digital technology, these objects even have the tools to communicate through their interfaces, adding a new interactive dimension. Contemporary designers, in addition to giving objects form, function, and meaning, now write the initial scripts that are the foundations for these useful and satisfying conversations.



**Frédéric Bevilacqua,**  
head of the Real Time  
Musical Interaction Team at  
IRCAM



# μgic

for Musicians, Artists, Anybody who uses  
hand motions expressively



Collaborator Liubo Borissoff with  
Carol Parkinson of Harvestworks,  
the sponsor of starting the μgic project

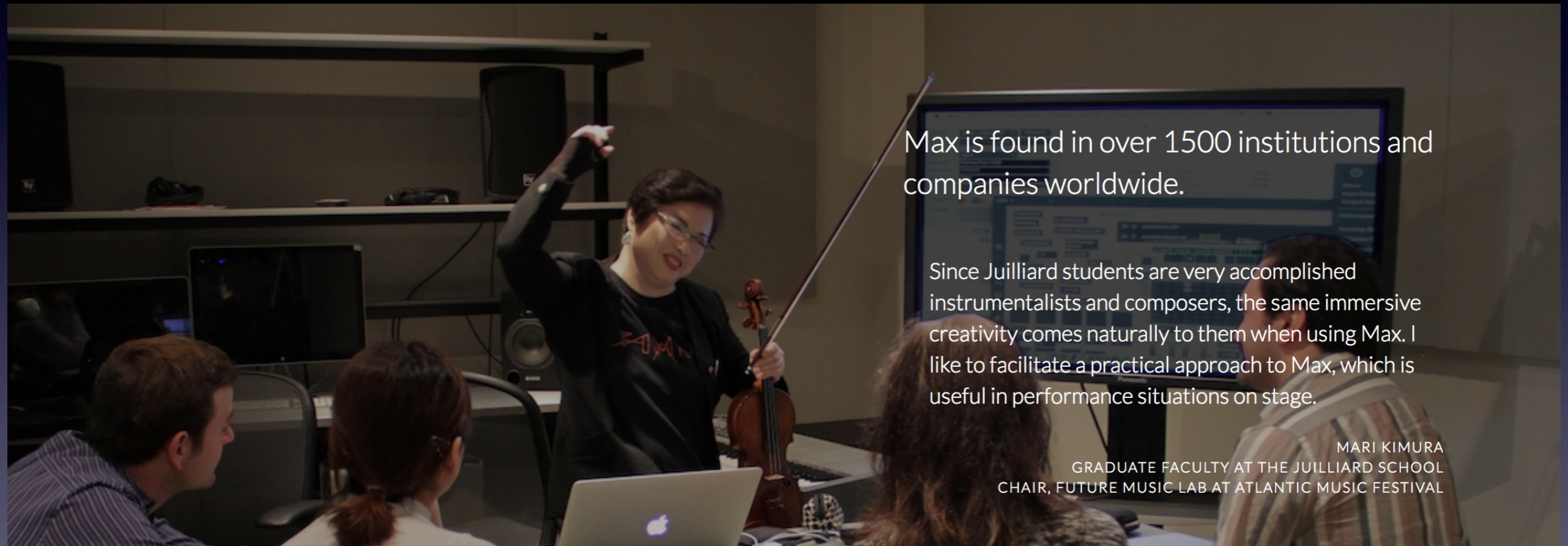
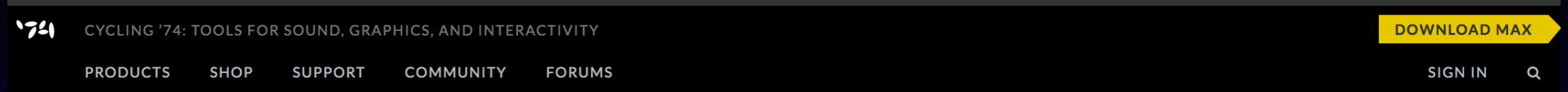
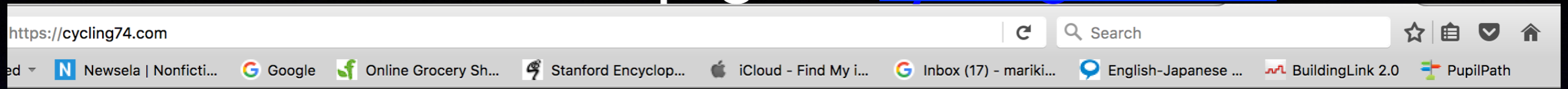


Music project has been  
supported by:

Harvestworks

[ITAC.org](http://ITAC.org) (Industry + Technology Assistance Corp),  
supported by NYSCA with the support of  
Governor Andrew Cuomo and the New York State  
Legislature and The Rockefeller Foundation's New  
York City Cultural Innovation Fund.

# “Interactive Computer Music Performance” class on the front page of [cycling74.com](https://cycling74.com)



# Educational Presentation 2013- “Future Music Lab” at Atlantic Music Festival

Category: Teaching Material - Cycling 74 Wiki  
[http://cycling74.com/wiki/index.php?title=Category:Teaching\\_Material](http://cycling74.com/wiki/index.php?title=Category:Teaching_Material)

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SOLBONG KIM, ARTISTIC DIRECTOR

**AMF**  
Atlantic  
Music  
Festival

"This will be our reply to violence:  
to make music more intensely, more beautifully, more  
devotedly than ever before."

- Leonard Bernstein

This Will Be Our Reply: Waterville, Maine • 7/7 - 8/3, 2014

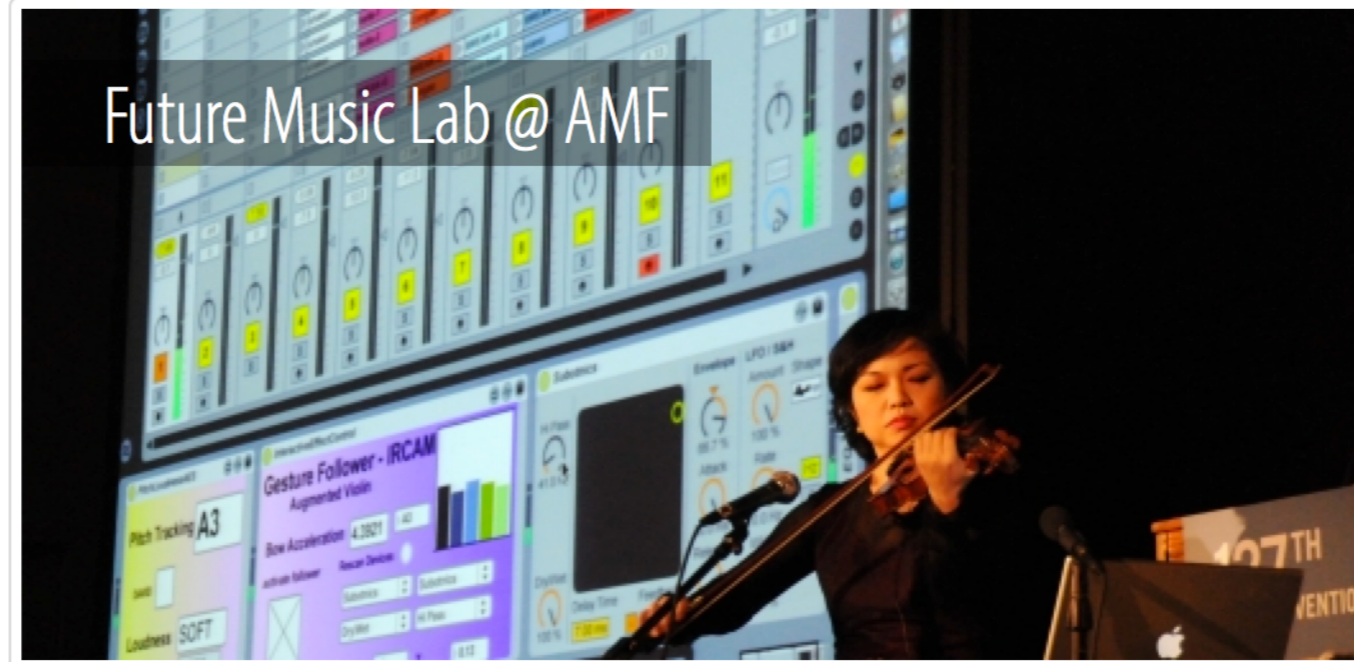


## Institute Programs

- › Composition Program
- › Conducting Program
- › Instrumental Program
- › Opera Workshop
- › Piano Institute
  - › Concerto Competition

Fellowship Programs

Future Music Lab @ AMF



AMF INSTITUTE

FUTURE MUSIC LAB @ AMF

» Mari Kimura, Director

Future Music Lab 2014 fellow  
Nicole Kuester, horn, UCSD  
using MO sensor in a theatrical piece



Future Music Lab 2015 fellow  
Aaron Plourde (trumpet, Juilliard/Yale)  
using the sensor in DubStep



# *μgic* Debut Performance



June 9th, 2016 at National Sawdust, NYC

# Musical demonstration

“Flow-Follower”  
with “μgic” motion sensor

Antonio Carlos Jobim/Chico Buarque

*Eu Te Amo (I love you)*

Recorded Presentation 2016-  
Solo CD featuring motion sensor  
“Voyage Apollonian”  
launched on January 27, 2017. (Innova Label)

\$10

