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# Body

# Controlled #4

bio interfacing

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## Performances

13.07.2012, 20:00

Marco Donnarumma  
(IT)

Claudia Robles Angel  
(CO)

Peter Kirn  
(US)

Pedro Lopes  
(PT)

## Open Stage

14.07.-15.07., 20:00

## Workshops

11.07. & 12.07., 15.-19.00

MAX/JITTER for beginners, presented by Claudia Robles Angel

14.07. & 15.07., 14-20.00

Xth Sense: Biophysical Music, presented by Marco Donnarumma

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Karl-Liebknecht-Straße 13  
10178 Berlin

[www.leapknecht.de](http://www.leapknecht.de)

[info@leapknecht.de](mailto:info@leapknecht.de)

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It is not novel for multimedia performances to have a strong corporeal profile primarily using gestures or actions coming from outside of the performer's body. However, the inside of the body can also be a very vital and diverse source of material for artistic purposes. This approach changes the paradigm of the gestural expression, bringing the processes going on under one's skin to the fore.

BodyControlled #4 - Bio Interfacing presents three performances using data collected from inside the human body: the EEG waves-based audio-visual performance INsideOUT by Claudia Robles Angel, Seas of Tranquility by Peter Kirn and Marco Donnarumma's Music for Flesh II, where sounds are produced - and controlled - by his muscles.

A keynote presented by Hasso-Plattner-Institute's investigator Pedro Lopes discusses "Human-Computer Interaction: Artistic and Scientific perspectives on augmenting our bodies".

In conjunction with the events of the performance night, anyone can learn more about the artists' methods by taking part in the workshops presented by Claudia Robles Angel and Marco Donnarumma. Or, come to LEAP in the 2 evenings after the performance night, and try out the instruments on display at the Open Stage.

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Marco Donnarumma

Claudia Robles Angel

Peter Kirn

Pedro Lopes



**Pedro Lopes** is a musician and HCI researcher. He is a PhD student of Prof. Patrick Baudisch Human Computer Interaction Lab in Hasso-Plattner-Institut, Postdam. His research focuses on augmented humans, and novel interaction devices. As a musician, he plays custom-modified turntables and other analogue mediums in in OTO, Whit, eitr and several Lisbon-based performing and radio art ensembles. He writes about music (in jazz.pt magazine), also talks about it (on Radio Zero).

### **Human-Computer Interaction: Artistic and Scientific perspectives on augmenting our bodies - Keynote**

As a discipline, Human Computer Interaction (HCI) has always wandered on the boundaries between art and science, mainly due to its multidisciplinary genealogy, but often because it is a process of envisioning and questioning the future. The ideas of Cyborg, Augmented Humans and Bio-Feedback have been strong research themes for decades in HCI.

However, two currents need to merge in order for us to grasp the "augmented human": firstly, to sense and understand ourselves is crucial - reading and understanding our bio-signals and secondly, to let ourselves be controlled. This keynote for BodyControlled #4 - Bio Interfacing revolves around such matters, where art and science naturally meet to discuss how contemporary bodies will sound and look.

## Pedro Lopes

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**Claudia Robles Angel** is an audiovisual artist born in Bogotá, Colombia, currently living in Cologne, Germany and active worldwide. She completed studies in Fine Arts in 1990 at the University J. T. Lozano in Bogotá (Colombia). She pursued postgraduate studies such as: Film Animation (1992-1993) at the CFP (Milan-Italy), MA in Visual Arts (1993-1995) at the École Supérieure d'Art Visuel (Geneva-Switzerland) and Sound Design and Electronic Composition at the Folkwang University Essen (Germany) with Prof. Dirk Reith (2001-2004).

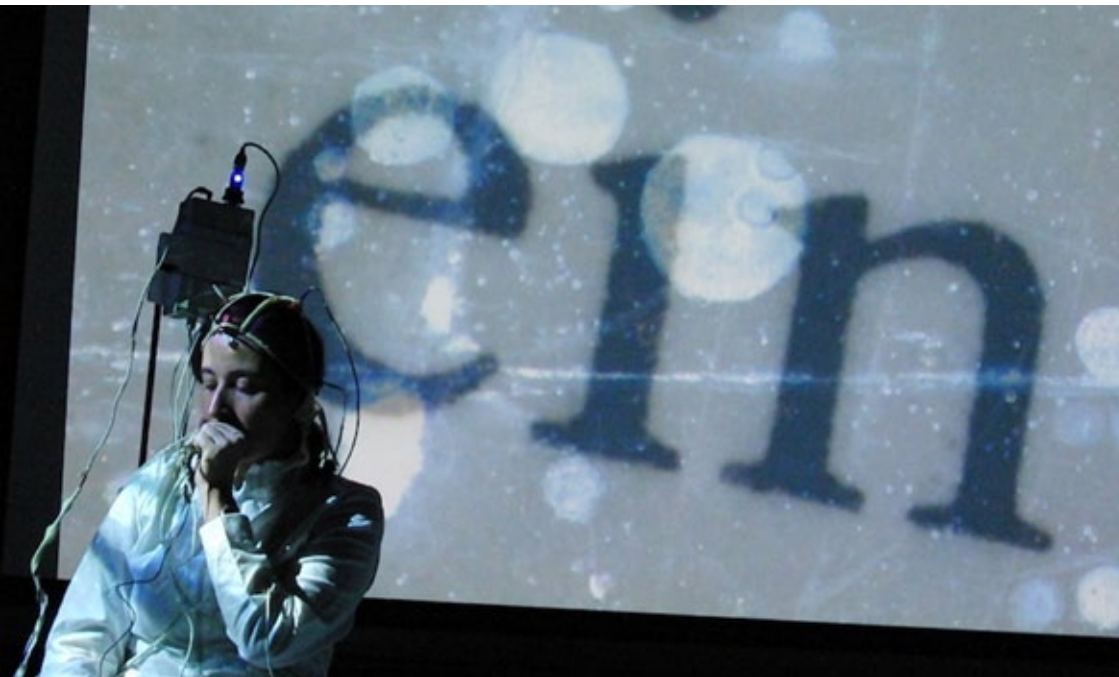
In 2004 she won the second prize at the competition Hören und Sehen organized by the ZKM (Center for Art and Media) in Karlsruhe and the Institute für Neue Musik in Darmstadt (both in Germany) for her audiovisual composition *Bewegung in Silber*. She has also been artist-in-residence in Germany both at the ZKM - Centre in Karlsruhe (2004-2006) and at the KHM in Cologne (2008-2009).

Her work has been presented in festivals and in group and solo exhibitions around the globe, from the International Computer Music Conferences ICMC in Copenhagen and Montréal, the Enter3 in Prague and the NYCEMF in New York to the

SIGGRAPH Asia in Yokohama, Japan and, more recently, to the Festival for Digital Media Re-New2011 in Copenhagen and at the NIME2011 in Oslo.

### INSIDEOUT

Performance using an electroencephalogram and real time media by Claudia Robles-Angel about the materialization of the performer's thoughts and feelings on the stage. In the performance, imagination becomes spatial. The stage is a place for the appearance of the invisible. Yasu Ohashi says: "the actors aim at our senses, our body and our unconscious and not at our intellect. Their gestures try to envision THE INVISIBLE WORLD". The performer, who is surrounded by sound and images, interacts with them using an EEG (electroencephalogram) interface, which measures the performer's brain activity. Those sounds and images – some already stored in the computer, some produced in real time – are modified consequently by the brain data via MAX/JITTER. Hence, the performer determines how those combinations will be revealed to the audience. Images are projected on a screen and also onto the performer, while sounds are projected in surround.



**Peter Kirn** is a composer, writer, coder, and media artist. Kentucky-born, New York educated, he's known as the editor of online magazines [createdigitalmusic.com](#) and [createdigitalmotion.com](#), co-creator of the open source MeeBlip synthesizer, and a writer on creative technology ([Keyboard](#), [Wax Poetics](#), [Make](#), [Popular Science](#), [Macworld](#), and others). His music has spanned traditional acoustic composition to live solo laptop performances. Recent appearances include the CommuniKey Festival (Boulder, Colorado), Saturn Never Sleeps (Philadelphia, PA) with visuals for Flying Lotus and live solo music, 22-speaker sound at Frequency Festival (Lincoln, England), Moving Sounds Festival (Austrian Cultural Forum, New York, New York), Virginia Tech University (USA), and In/Out Festival (New York, NY). He is completing a PhD in music composition at The City University of New York and is currently based in Berlin.

### **Seas of Tranquility**

Music's connection to physical and mental state is deep across cultures, associated with trance states and spiritual well-being, and sometimes literally assigned applications in healing. In this work, artist Peter Kirn works with simple biofeedback mechanisms to produce generative compositional structures. In place of basic auditory feedback alone, an interactive musical structure provides both the feedback necessary to allow the user/performer to modulate the body as well as a responsive musical landscape that evolves around that state. Using open source hardware and software, he interfaces biological input to audiovisual output, live in performance.





New media and sonic artist, performer and teacher, **Marco Donnarumma** was born in Italy and is based in Edinburgh, UK. Weaving a thread around biomedica research, musical and theatrical performance, participatory practices and subversive coding, he looks at the collision of critical creativity with humanized technologies.

Marco has performed and spoken in 28 countries including US and South America, Europe, India, China, South Korea and Australia. His works have been selected at leading art events (ISEA, Venice Biennale, WRO Biennale), specialized festivals (FILE, Sonorities, Némo, Mapping, Píksel, Re-New, Laboral, EMAF, Visionsonic, Carnival of e-Creativity) and major academic conferences (NIME, ICMC, Pure Data Convention, Linux Audio Conference Stanford CCRMA, SICMF).

His projects have been reviewed on Wired, Create Digital Music, We Make Money Not Art, Rhizome, Weave, Turbulence.org. Most recently, he appeared in the book "New Art/Science Affinities" (CMU and Studio for Creative Enquiry, US). Artist in residence at Inspace (UK) and the National School of Theatre and Contemporary Dance (DK). His work has been funded by the European Commission, Creative Scotland, New Media Scotland and the Danish Arts Council.

## Music for Flesh II

Interactive music performance for enhanced body ('Xth Sense Biosensing Technology)

Music for Flesh II (MFII) is a seamless mediation between human biosonic potential and algorithmic composition. By enabling a computer to sense and amplify the muscular sounds of human tissues, the work approaches the biological body as a means for computational artistry. Muscle movements and blood flow produce subcutaneous mechanical oscillations, which are nothing but low frequency sound waves. Two microphone sensors capture the sonic matter created by his limbs and send it to a computer. This develops an understanding of his kinetic behaviour by \*listening\* to the friction of his flesh. According to this information, it manipulates algorithmically the sound of my flesh and diffuses it through loudspeakers. The neural and biological signals that drive the performer's actions become analogous expressive matter, for they emerge as a tangible haunting soundscape.

MFII is based on the Xth Sense' a new and original, biophysical interactive system based on free, open source tools developed by the author. The Xth Sense (XS) was recently awarded the first prize in the Margaret Guthman Musical Instrument Competition (Georgia Tech, US 2012) as the "world's most innovative new musical instrument".

Marco Donnarumma

**Max/Jitter for beginners:** This workshop is suitable for visual artists, sculptors, dancers, performers and students interested in experimenting with visual interactive environments.

**Claudia Robles Angel**

2 day workshop: 11.07. & 12.07.2012, 15:00-19:00

MAX is an application specially designed for interactive works such as installations and performances with music and video in real time. It can be connected to Arduino interfaces, a wide variety of controllers, sensors and MIDI controllers and it is relatively easy to learn. It includes different environments, such as MSP (for real time audio) and Jitter (for real time video).

The workshop gives an introduction to the software and, in particular, about the use of Jitter in interactive environments such as installations or dance pieces, with the aid of MIDI controllers, tracking systems and/or body sensors. The workshop also includes an overview of Jitter objects, and the design of patchers and user-interfaces.

Workshop language is english.

**Registration:**

Please send an email before 06.07.2012 to [workshops@leapknecht.de](mailto:workshops@leapknecht.de). The number of participants is limited to 10 places. The participation fee is 80€ per person for 2 days and 50€ for one day and must be paid in advance. After e-mail registration you will receive an email with payment information.







## **Xth Sense: Make your own biophysical sensor for interactive music and video**

person and must be paid in advance. After e-mail registration you will receive an email with payment information.

**Marco Donnarumma**

2 day workshop: 14.07. & 15.07.2012, 14:00-20:00

Hands on training in augmentation of the body for musical performance with Marco Donnarumma.

Creating your own low cost biosensing wearable device for muscle sounds

The workshop offers a hands-on experience and both theoretical and practical training in gestural control of music and bodily musical performance of music and live video, deploying the Xth Sense (XS), a brand-new, biophysical and open technology.

The XS was recently awarded the first prize in the Margaret Guthman Musical Instrument Competition (Georgia Tech, US 2012) as the "world's most innovative new musical instrument".

Participants build their own XS biosensor and learn how to generate interactive music from the muscle sounds of their bodies.

Workshop language is english.

Registration:

Please send an email before 06.07.2012 to [workshops@leapknecht.de](mailto:workshops@leapknecht.de). The number of participants is limited to 10 places. The participation fee is 100€ per

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**Organised by**

João Pais (Guest-Curator)  
Daniel Franke (LEAP)  
Kai Kreuzmüller (LEAP)  
John McKiernan (LEAP)  
Aran Kleebaum (LEAP)

**Supported by****in collaboration with LEAP**

Lab For Electronic Arts And Performance (LEAP) is a project space for electronic, digital and performance art that aims to forge relationships connecting Art, Science and Technology.

LEAP curates and presents solo and group exhibitions, performances, concerts, workshops, meetings and talks.



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