

# Sofia Dahl

## Curriculum Vitae

Copenhagen, November 24, 2010

**Born** March 4, 1972 in Stockholm, Sweden.

**Contact** Department of Architecture, Design, and Media Technology  
Aalborg University Copenhagen  
Lautrupvang 15  
DK-2750 Ballerup  
Denmark

Office phone: +45-9940 2496  
Fax: +45-9940 2405  
dr.sofia.dahl@gmail.com  
<http://www.sofiadah1.net/>

## Appointments

- Aug 2008– present *Assistant professor*  
Section of Medialogy, Department of Architecture, Design and Media Technology, Aalborg University Copenhagen, Denmark.  
Research (50%), Teaching and supervision of medialogy bachelor and master students.
- Jan 2007–Aug 2008 *Marie Curie Intra-European Postdoctoral fellowship*  
Institute of Music Physiology and Musicians' Medicine, Hanover University of Music and Drama, Hanover, Germany.  
Full time research with Prof. Eckart Altenmüller. Capture and analysis of movement, muscle activity, timing, and sound production in healthy and diseased percussionists.
- Jan – Dec 2006 *Postdoctoral fellow*  
Cognitive and Systematic Musicology Lab, School of Music, Ohio State University, Columbus, U.S.A.  
Full time research with Prof. David Huron. Studies of preferred dance tempo and the perception of visual displays for people singing differing pitches.
- March – June 2001 *Guest researcher*  
Laboratorio di Informatica Musicale, Dipartimento di Informatica, Sistemistica e Telematica (DIST), Università di Genova, Italy.  
Full time research with Antonio Camurri. Capture and analysis of movement in percussion performances.
- Jan 1997– Dec 2005 *PhD Student*  
Dept. of Speech, Music and Hearing, KTH Royal Institute of Technology, Stockholm, Sweden. (Part-time until Dec 2001, then full time.) Work on production and perception of human movement and timing, including analysis of movement strategies and expression in percussion playing.
- May 1996– Feb 2001 *Personal caretaker and assistant*,  
Socialtjänstförvaltningen Stockholms Stad (Social community service, Stockholm city) and Särnmark Ekonomiassistans. Part-time work as personal caretaker and assistant to persons with special needs (included a wide range of handicaps, from movement disabilities to blind and sight-impaired).

## Education

- Jun 2006 *Ph.D., Speech and Music Communication*  
KTH Royal Institute of Technology, School of Computer Science and Communication, Department of Speech, Music, and Hearing, Stockholm, Sweden.  
Dissertation Sep. 29, 2005. Thesis: *On the beat: Human movement and timing in the production and perception of music.*  
Advisors: Anders Askenfelt and Anders Friberg.  
Opponent: Prof. David Huron, Cognitive and Systematic Musicology Lab, School of Music, Ohio State University.  
Committee: Ann Lantz, KTH School of Computer Science and Communication; Patrik Juslin, Department of Psychology, Uppsala University, Uppsala, Sweden; Prof. Petri Toiviainen, University of Jyväskylä, Jyväskylä, Finland.
- May 2003 *Techn. Lic., Speech and Music Communication*  
KTH Royal Institute of Technology, School of Computer Science and Communication, Department of Speech, Music, and Hearing, Stockholm, Sweden.  
Thesis: *Striking Movements: Movement strategies and expression in percussion playing.*  
Advisors: Anders Askenfelt and Anders Friberg.  
Opponent: Prof. Alf Gabrielsson, Department of Psychology, Uppsala University, Uppsala, Sweden.
- Apr 2002 *University pedagogy, 2 credits*<sup>1</sup>  
KTH, Royal Institute of Technology.
- Aug– Nov 1999 *Neuroscience, 10 credits*  
Karolinska Institute, Stockholm, Sweden.
- Jan– Jun 1999 *Biomechanics, 10 credits*  
Stockholm University College of Physical Education and Sports, Stockholm, Sweden.
- Sep 1996– May 1998 *Additional courses in Acoustics, Mechanics, and Signal analysis, 22 credits*  
KTH, Royal Institute of Technology.
- Jan 1997 *University Diploma Electrical Engineering, Electronics*  
KTH, Royal Institute of Technology.  
Diploma project: *Spectral changes in the tom-tom related to striking force.*
- Sep 1994– Dec 1996 *Musicology, 50 credits*  
Stockholm University, Stockholm, Sweden.  
Project: *Women and Percussion.*
- Sep 1993– May 1994 *Studies in Music Performance*  
Wiks Folkhögskola, Uppsala, Sweden.

## Research Interests

Musicians' body movements and interaction with the instrument. Movements used for control and expression in music performance.

The production and perception of timing and tempo.

Music perception and cognition.

The relationship between action and perception in music.

Visual perception of expressive movements and gestures.

The capture, analysis and characterization of movements in sound and music communication.

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<sup>1</sup>One credit in the Swedish system represents one week's full-time study, and 40 credits one full academic year.

## Work in Externally Funded Research Projects

- Jan 2007–Aug 2008 *ASIAMS, Auditory and Sensorymotor Integration in the Acquisition and Maintenance of Skilled movements in musical performance.*  
Marie Curie Intra-European Fellow at Hanover University of Music and Drama, designing and performing measurements and analysis of movements, timing, and sound production for healthy and diseased percussionists. Principal investigator: E. Altenmüller. Funded by the European commission MOBILITY-2.1, EIF.
- Mar 2003–Mar 2007 *COST Action 287 ConGAS, Gesture CONtrolled Audio Systems*  
<http://www.cost287.org/> funded by the European commission.  
Appointed Swedish delegate, responsible for the collection and diffusion of knowledge from Sweden to the rest of Europe. Editor and main author for one chapter in the book on Musical Gestures published by the action.
- Nov 2000–Oct 2003 *MEGA, Multisensory Expressive Gesture Applications,*  
<http://www.megaproject.org/> funded by the European commission (IST-1999-20410).  
Researcher in the team of project partner KTH. Working on analysis and applications of expressive gestures. Setting up and working on the movement capture and analysis in the interactive, collaborative game *Ghost in the Cave*. Experiments on visual perception on musicians' expressive gestures.
- Jan 2001–Dec 2002 *SOb, The Sounding Object,*  
<http://www.soundobject.org/> funded by the European commission (IST-2000-25287).  
Researcher in the team of project partner KTH. Working on gestural models to control physical sound models. Setting up and testing different interfaces used to control real-time drum models. Investigated effect on delayed auditory feedback for timing control.
- Sep 2000–Sep 2001 IHP network, *MOSART, Music Orchestration Systems in Algorithmic Research and Technology,* funded by the European commission (HPRN-CT-2000-00115).  
Three months visiting researcher at Laboratorio di Informatica Musicale, Università di Genova, Italy. Working on capture and analysis of expressive movements in marimba performance.
- Feb 1997–Dec 1999 *Music and Motion,*  
funded by The Bank of Sweden Tercentenary Foundation.  
Researcher, performing measurements on percussionists movement strategies while playing.

## Teaching and supervision experience

- 2008 – present Aalborg University Copenhagen (AAU)  
Department of Architecture, Design and Media Technology.  
At AAU I am teaching and supervising Medialogy students on bachelor and master level; coordinating activities on 4th semester on the bachelor programme; responsible for courses on *Visual Perception, Audio Design, and Design and Analysis of Experiments*. In the recent revision of the Medialogy study plan, I formulated the course descriptions (specifying knowledge and skills requirements) for the courses on Perception and Experimental design.
- 2007–2008 Hanover University for Music and Drama (HMT)  
Institute of Music Physiology and Musicians' Medicine  
Involved in several of the courses running with recurrent talks and demonstrations on both undergraduate and graduate level. I also supervised a psychology student doing his internship.
- 1997–2005 KTH, School of Computer Science and Communication

Department of Speech, Music and Hearing.

During my years at KTH I participated in the teaching of a number of undergraduate courses and completed the course University pedagogy. Together with Anders Friberg and Roberto Bresin I also planned and taught the course *Musical Communication and Music Technology*, running for the first time in spring 2003.

In addition to the regular courses, I was also responsible for the supervision of two international students.

## Examination of doctoral dissertations

**Examination committee.** Alexander Bouënard, *Synthesis of Music Performances: Virtual Character Animation as a controller of Sound Synthesis*. University of Southern Brittany, SAMSARA - VALORIA lab, Vannes, France, 2009.

**External reviewer.** Diego Dall'Osto, *Tapping with music: Intervals and synchronization*. Universitat Autònoma de Barcelona, Departament de psicologia bàsica, evolutiva i de l'educació, 2007.

## Organizing activities and Reviewing assignments

Conference

- *AFM World Conference on Innovative Virtual Reality 2011* Steering committee.
- *Haptic Audio Interaction Design* Organizing committee and Demo chair 2010.
- *Sound and Music Computing Paper* committee 2010.
- *Interactive Sonification Workshop (ISon)* Chairing session 2010.
- *7th Triennial Conference of European Society for the Cognitive Sciences of Music, ESCOM2009* Chairing session.
- *New Interfaces for Musical Instruments* Demo reviewer 2008.
- *International Computer Music Conference Paper* committee and reviewer 2007, reviewer 2005, 2006.

Recurrent peer-reviewing services for journals:

- *Journal of New Music Research*, 2008, 2009 (will join the editorial board in January 2011).
- *Journal of Experimental Psychology: Human Perception & Performance*, 2008, 2010.
- *Music Perception*, 2008, 2009, 2010.
- *Human Movement Science* 2007, 2010.
- *International Journal of Human-Computer Studies*, 2008.

## Invited talks, lectures and seminars

2009                      Movement and timing control in drummers. *Invited talk at Center of Functionally Integrative Neuroscience*, Aarhus University / Aarhus University Hospital, Denmark, Nov 20, 2009.

2008                      Motor control in drumming: Influence of movement pattern on contact force and sound characteristics. (Together with Eckart Altenmüller). *Invited talk at ACOUSTICS'08, Joint meeting Acoustical Society of America, ASA, the European Acoustics Association, EAA, and the Société Française d'Acoustique, SFA*. Palais des Congrès, Paris, June 29 – July 4, 2008.

Continuous movements generating discrete events: Preparations and limitations in drumming movements. *Invited talk at Musical Movement and Synchronization workshop*, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany May 3–4, 2008.

- Expression and control in music performance: Information conveyed through musicians' movements. *Invited seminar at Deutsche Telekom Laboratories*, Berlin, Germany, Jan 21, 2008.
- 2007 Studying expression and control in musicians' movements. *Invited seminar at Music, Informatics and Cognition*, Edinburgh University, Edinburgh, U.K. Oct 23, 2007.
- Moving for control and expression: Musicians' use of gesture in performance. *Invited talk at Medialogy Lab*, Aalborg University Copenhagen, Copenhagen, Denmark, May 22, 2007.
- 2006 Looking at movement gesture: Examples from drumming and percussion. *Invited talk at Workshop on Motion Capture for Music Performance*. CIRMMT - Centre for Interdisciplinary Research in Music Media and Technology, McGill University, Montreal, Canada, Oct 31, 2006.
- Music and movement. *Invited talk at Cognitive and Systematic Musicology Lab*, School of Music, Ohio State University, Columbus, Oct 26, 2006.
- Production and perception of gestures in music performance, *Invited talk at the Second International Conference on Music and Gesture*. Royal Northern College of Music, Manchester, U.K., Jul 22, 2006.
- 2005 Att hålla takten. Tempodrift hos tränade musiker och individuella skillnader i uppfattningen av konstant tempo. *Invited seminar in Music psychology*, Department of Psychology, Uppsala University, Sweden, Dec 2, 2005.
- On the beat: Movements and timing in drumming and perception of tempo drift. *Invited talk at the Sensory Motor Neuroscience group*, School of Psychology, University of Birmingham, U.K., Sep 12, 2005.
- Gestures in music performance: Examples from drumming strategies and expressive movements. *Invited seminar at the Perception Action Cognition group*, Psychology Department, University of Glasgow, U.K., Feb 25, 2005.
- 2001 The accented stroke - Kinematics and timing. *Invited talk at The Gesture Workshop: Gesture Devices for Digital Audio Control*. Tempo Reale, Florence, Italy, Apr 30, 2001.

## Awards

- Jan 2007– Jun 2008 Marie Curie Intra-European Fellowship (EIF)
- May 2008 Sempre Travel Award. Awarded by the Trustees of the Society for Education, Music and Psychology Research (SEMPRE)

## Programming Skills

For data analysis: Predominantly script languages such as Matlab and R (a language for statistical computing).

For data acquisition and real-time manipulations: Graphic programming environments such as pure data, Max/MSP, EyesWeb, and LabView.

Other:  $\text{\LaTeX}$ (typesetting text), html

## Music Experience

1986– present *Drumset in bands*

Active playing the drums in various constellations (metal, rock, pop, and jazz). Last studio recording made with Aoria 2005. Currently lessons for Per Møller Jensen.

Mar – Dec 2006 *Classical percussion*

University Band at School of Music, Ohio State University.

Three concerts directed by Jon Waters, Zachary Roberts, and others.

Mar – Dec 2006 *Steel band*

Double tenor in OSU Steel Band, directed by Ken Archer, at School of Music, Ohio State University. Concerts together with Lennard Moses.

1998 – 1999 *Choir singing*

First alto voice in the mixed choir "Osqstämman." Performing a number of concerts.

Sep 1993– May 1994 *Studies in Music Performance*

Wiks Folkhögskola, Uppsala, Sweden. Weekly drum lessons for Hans Bruniusson.

1989 – 1990 *Military/rudiments*

Participated in "Trumslagarpojkarna" instructed by Tommy Törner, and performed in a number of parades for the change of guards, "Vaktparaden".

1986 – 1992 *Drumset studies*

Weekly drum lessons for Per Hultén at Kommunala Musikskolan.

## **Citizenship and Language skills**

*Citizenship:* Swedish

*Language skills (in order of fluency):*

**Swedish** Native speaker.

**English** Proficient. Professional working language.

**Danish** Fluent in oral skills, reading, and writing. Passed Prøve i Dansk 3 with grades A and B (oral and written, respectively).

**German** Fluent in oral skills, reading, and writing. Studies in Deutsch Mittelstufe in 2007.

**Italian** Conversational skills. Two-week course in Siena 2005.

## **Miscellaneous**

2009–2010 *Voluntary work*

Stage hand and helper at Global Copenhagen, a voluntary based world music venue arranging weekly concerts with visiting artists from all over the world.