

Curriculum vitae

Akke Mats Houben

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Personal data

NAME: Houben, Akke Mats
NATIONALITY: Dutch
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DATE OF BIRTH: 10-04-1991
GENDER: male
WEBPAGE: <http://akkeh.github.io>



Research interests

My main research interests strive to achieve an understanding of neuronal systems and processes at different levels of description (conceptual and qualitative) through the development and analysis of theoretical and computational models. I am interested in what neural systems can do once the brain is not seen as a computer.

I want to investigate how different micro- and mesoscale neuronal dynamics and neural interactions give rise to global network dynamics, with a special interest in the emergence and organisation of transient structures leading to the breaking of symmetries in neuronal systems. Ultimately, I wish to tie these principles and processes into the sensori-motor loop from which behaviour and cognition emerge.

KEYWORDS: - Theoretical & conceptual neuroscience
- Excitability & perturbation propagation
- Self-organisation & symmetry breaking
- Neuronal dynamics, adaptation & organisation

Publications

Houben, A.M. & Keil, M.S., (2020). A calcium-influx-dependent plasticity model exhibiting multiple STDP curves. *Journal of Computational Neuroscience*, 48(1), 65-84

Houben, A.M., (2020, pre-print). Frequency selectivity of neural circuits with heterogeneous discrete transmission delays. *arXiv:2009.09250*, submitted to Neural Computation

Houben, A.M., (2020, pre-print). Signal anticipation and delay in excitable media: group delay of the FitzHugh-Nagumo model. *arXiv:2101.00500*

Houben, A.M., (in preparation). Your thoughts are alive: neuronal assemblies and autopoiesis.

Education & training

DATES: 2017-2018
TITLE: **Mres in Behavior and Cognition** (60ECTs)
MAIN SUBJECTS: - Computational modeling of neurons, networks, behavior and cognition
- Neuroscience, cognition and brain functioning
- Neuroimaging & neuronal data analysis
- Data analysis & research methodologies
INSTITUTE: *Faculty of Psychology*
University of Barcelona
Barcelona, Spain
LEVEL: EQF level 7
GPA: **9.2/10**

DATES: 2013-2017
TITLE: **Ba (Hons.) in Music and Technology** (240ECTs)
MAIN SUBJECTS: - Programming
- (Digital) signal processing
- System design & analysis
INSTITUTE: *Faculty of Music and Technology*
University of the Arts Utrecht
Utrecht, The Netherlands
LEVEL: EQF level 6
GPA: **8.4/10 (with double Honours)**

DATES: 2003-2009
TITLE: **Preparatory scientific education (VWO)**
INSTITUTE: *College de Heemlanden*
Houten, The Netherlands
LEVEL: EQF level 4

Student awards & grants

DATES: April-July 2017
GRANT: Jan van Scorel exchange grant
GRANTED BY: University of the Arts Utrecht

DATES: November 2015-May 2016
GRANT: Erasmus+ traineeship grant
GRANTED BY: University of the Arts Utrecht

Teaching experience

DATES: 2014-2015
SUBJECT(S): - Second-year programming classes (C++)
- First-year programming classes (LISP & java)
INSTITUTE: *University of the Arts Utrecht*
PO-BOX 2471
1200CL Hilversum, The Netherlands

Invited talks

DATE(S): 06 September 2018
TITLE: **A calcium-influx-dependent plasticity model of single compartment neuron models**
INSTITUTE: *University of Padova*
Padova, Italy

Conferences, seminars & workshops

Poster presentations

DATE(S): 24-25 May 2018
CONFERENCE NAME: **BARCCSYN**
INSTITUTE: *Centre de Recerca Matemàtica*
Barcelona, Spain
WEBSITE: www.crm.cat/2018/barccsyn
POSTER TITLE: *Calcium influx dependent plasticity model*

Organisation & crew

YEAR: 9-12 April 2015
CONFERENCE NAME: **Linux Audio Conference**
INSTITUTE: *Johannes Gutenberg University*
Mainz, Germany
WEBSITE: <http://lac.linuxaudio.org/2015>
ROLE: session chair & technical assistance

Attendance

DATE(S): 8-9 March 2018
CONFERENCE NAME: **Does the body need a brain to be a body?**
INSTITUTE: *Universitat de Barcelona & Human Brain Project*
Barcelona, Spain
WEBSITE: <https://hbpbrainbody.wordpress.com/>

Other academic experience

Grant application reviewer

DATE(S): 10-25 March 2020
GRANT: **SONATA-15**
GRANTING BODY: National Science Center, Poland

Working experience

DATES: 2019-present
POSITION: **Junior software engineer**
MAIN ACTIVITIES: - C++ programming
- protocol interpretation
EMPLOYER: *nTh Network Technologies to Help*
via G. Savelli, 128
35129 Padova, Italy
SECTOR: Telecom & IT

DATES: 2019-2020
 POSITION: **External collaborator (MEG data analysis)**
 MAIN ACTIVITIES: - MEG data analysis
 - preparation of manuscript
 EMPLOYER: *Università degli Studi di Milano-Bicocca*
 SECTOR: Research

DATES: 2016-2017
 POSITION: **Junior software developer**
 MAIN ACTIVITIES: - Database management
 - Python & SQL
 EMPLOYER: *DDL Diagnostics Laboratory BV*
Visseringlaan 25
2288ER Rijswijk, The Netherlands
 SECTOR: Bio-informatics & IT

DATES: 2015-2016
 POSITION: **Research intern**
 MAIN ACTIVITIES: - Individual research project
 - Corpus analysis & programming
 EMPLOYER: *Music Technology Group*
Universitat Pompeu Fabra
c/Roc Boronat, 138
08018 Barcelona, Spain
 SECTOR: Research

DATES: 2014-2015
 POSITION: **Student delegate at participation council**
 MAIN ACTIVITIES: - Representation of students to executive board
 EMPLOYER: *University of the Arts Utrecht*
PO-BOX 2471
1200CL Hilversum, The Netherlands
 SECTOR: Education

Skills & competencies

LANGUAGES: Dutch (mother tongue), English (C2), German (B1), Italian (B1) & Spanish (A1)

PROGRAMMING: C++, Python, Matlab/GNU Octave advanced
 Fortran, Java intermediate
 CLisp beginner

MISC. SOFTWARE: Bash/shell scripting, LaTeX, gnuplot, SQL

ANALYSIS PACKAGES: Statistical Parametric Mapping (SPM), EEGLab, Fieldtrip toolbox, statistical packages (e.g. R, Pandas)