

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
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Research interests

My main research interests aim to achieve an understanding of neuronal systems and processes at different levels of description (conceptual and qualitative) through the development and application of computational models. I want to investigate how the interaction between the dynamics of single neurons give rise to neuronal assemblies and what the roles of these cell assemblies are in perception, memory, cognition and processing in the brain. I am particularly interested in the occurrence and functions of correlated activity in -and between- neural networks, the formation and role of synchronous and a-synchronous states in the brain and the self-organising principles underlying these phenomena. Ultimately, I wish to discover how these principles and processes of the brain self-organise and give rise to behavior, memory and consciousness.

KEYWORDS: - Computational & systems neuroscience
- Neuronal dynamics, oscillations, plasticity, adaptation and organisation
- Formation and role of synchronous and a-synchronous neuronal groups
- Dynamics of assembly formation and their functions
- How interactions at different scales give rise to consciousness

Education & training

DATES: 2017-present
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

DATES: 2013-2017
 TITLE: **Ba 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 (with Honours)

DATES: 2016-2017
 TITLE: **Honours program Ba** (10ECTs)
 INSTITUTE: *Faculty of Music and Technology*
 University of the Arts Utrecht
 Utrecht, The Netherlands
 LEVEL: EQF level 6

DATES: April-July 2017
 TITLE: **Extracurricular: Neural Noise and Neural Signals**
 MAIN SUBJECTS: - Models and measures of neural noise
 - Nonlinear dynamics, stochastic processes and information theory
 INSTITUTE: *Bernstein Center for Computational Neuroscience*
 Humboldt University
 Berlin, Germany
 LEVEL: EQF level 7

DATES: April-July 2017
 TITLE: **Extracurricular: Machine Intelligence II**
 MAIN SUBJECTS: - Unsupervised machine learning methods
 - Analysis of machine intelligence algorithms
 INSTITUTE: *Technical University of Berlin*
 Berlin, Germany
 LEVEL: EQF level 7

DATES: November-December 2016
 TITLE: **Extracurricular: Bayesian Statistics**
 MAIN SUBJECTS: - Conditional probabilities & bayesian inference
 - Data analysis
 INSTITUTE: *Coursera (Duke University)*
 <https://www.coursera.org/learn/bayesian>
 LEVEL: Coursera course

DATES: September-November 2016
 TITLE: **Extracurricular: Machine learning**
 MAIN SUBJECTS: - Bias-variance analysis of algorithms
 - Bayesian learning, regression models & neural networks
 - Java implementations
 INSTITUTE: *Utrecht University*
 Utrecht, The Netherlands
 LEVEL: EQF level 6

DATES: September-November 2016
 TITLE: **Extracurricular: Logic**
 MAIN SUBJECTS: - Set theory, predicate logic & propositional logic
 - Proof by induction & natural deduction
 INSTITUTE: *Utrecht University*
Utrecht, The Netherlands
 LEVEL: EQF level 6

DATES: 2014-2015
 TITLE: **Extracurricular: Audio signal processing for music applications**
 MAIN SUBJECTS: - Fourier-based signal processing & analysis
 INSTITUTE: *Coursera (Universitat Pompeu Fabra & Stanford University)*
<https://www.coursera.org/learn/audio-signal-processing>
 LEVEL: Coursera course

DATES: 2012-2013
 TITLE: **Preparatory course Music and Technology**
 INSTITUTE: *University of the Arts Utrecht*
Utrecht, The Netherlands

DATES: 2011-2012
 TITLE: **Several courses of Ba Science**
 MAIN SUBJECTS: - Mathematics, programming, physics, organic chemistry
 INSTITUTE: *Radboud University Nijmegen*
Nijmegen, The Netherlands
 LEVEL: EQF level 6

DATES: 2011-2012
 TITLE: **Extracurricular: Biology**
 INSTITUTE: *ROC Midden Nederland*
Utrecht, The Netherlands
 LEVEL: EQF level 4

DATES: 2009-2010
 TITLE: **Several courses of Ba Psychology**
 MAIN SUBJECTS: - Neuronal anatomy, neurophysiology & research methodologies
 INSTITUTE: *Tilburg University*
Tilburg, The Netherlands
 LEVEL: EQF level 6

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-May 2015
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

Working experience

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

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

DATES: 2012-2013
POSITION: **Administrative assistant**
MAIN ACTIVITIES: - Data entry and customer service
EMPLOYER: *RHC Dealergroep BV*
Reactorweg 160
3542AD Utrecht, The Netherlands
SECTOR: Medical equipment

Skills & competencies

MOTHER TONGUE: Dutch
OTHER LANGUAGES: English (C2), German (B1) & Spanish (A1)

PROGRAMMING	C++	advanced
	Python	advanced
	Matlab/GNU Octave	advanced
	Bash/shell scripting	advanced
	LateX	advanced
	R	advanced
	Java	intermediate
	SQL	intermediate
	CLisp	beginner
Fortran	beginner	

RESEARCH:

- Trained in neuroscience research methods
- Experience in computational modeling of neurons & networks
- Skilled in investigation, understanding and implementation of algorithms
- Used to perform (independent) research
- Creative and resourceful

DRIVING LICENCE: B
