

## Personal data

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NATIONALITY: Dutch  
E-MAIL: akkehouben@gmail.com  
DATE OF BIRTH: 10-04-1991  
GENDER: male  
WEBPAGE: <http://akkeh.github.io>

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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

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## 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

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## 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

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