

# CV – MADDS ANDERSEN

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2200 Kbh N, Denmark  
Date of birth: March 3, 1986  
Nationality: Danish



## WORK EXPERIENCE

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January 2016 –  
present

### **Clinical scientist MR (50%), Philips Nordic**

Supporting MR related research activities in the Copenhagen Area.

January 2016 –  
present

### **Postdoctoral researcher (50%), Hvidovre Hospital**

Method development for the new actively shielded Philips Achieva 7T MR system at Danish Research Center for MR in the 7T group lead by Esben Petersen.

December 2015

### **Research Assistant, Technical University of Denmark**

Continued work from my PhD, prepared for my PhD defence.

December 2012 –  
December 2015

### **PhD student, Hvidovre Hospital & Technical University of Denmark**

Title of thesis: *Towards Motion-Insensitive Magnetic Resonance Imaging Using Dynamic Field Measurements.*

Supervisors: Lars. G. Hanson and Kristoffer H. Madsen.

I focused on motion issues in brain MRI and worked on three independent aspects:

1) Stabilization of field-of-view relative to the head position (prospective motion correction), 2) Stabilization of B0 fluctuations in the brain due to body and head motion, 3) Prediction of tip angle changes due to head motion.

Work included MRI scanning and pulse programming on Philips Achieva systems (3T and 7T).

October 2013 –  
February 2014

### **Visiting researcher, CJ Gorter center for High field MRI, Leiden University Medical Center**

A 5 month research visit to Andrew Webb's group during my PhD project. I worked on physiological B0-field corrections at 7T based on external field probe measurements. Maarten Versluis as day-to-day supervisor.

January 2009 – June  
2014

### **Teaching assistant, Technical University of Denmark**

I have worked as a teaching assistant in the following courses:

- Spring 2013, spring 2014: Medical Magnetic Resonance Imaging (5 ECTS MSc course).

- Autumn 2009, autumn 2010 - autumn 2012 : Advanced Engineering mathematics I (20 ECTS fundamental mathematics course) .
- Autumn 2012: Calculus and algebra 2 (5 ECTS fundamental mathematics course for the 3½ year engineering educations).
- Autumn 2010: Electrophysiology (5 ECTS course for students on 5<sup>th</sup> semester).

January 2011 –  
January 2012

**Teaching assistant, Copenhagen University, Faculty of Health and Medical Sciences**

Winter 2011, winter 2012: Introduction to biomedical engineering II (2.5 ECTS introductory course).

## EDUCATION

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December 2012 –  
December 2015

**PhD in electrical engineering, Technical University of Denmark**

Courses: Computational Data Analysis (02910), Advanced Electromagnetics (31428), Magnetic Resonance Methodology Study Group (P31), Pulse programming course for Philips Achieva/Ingenia Systems (Utrecht University), MR Physics Course (Lund University), The Business Course for Industrial PhD students (42790).

September 2009 –  
June 2012

**MSc in biomedical engineering, Technical University of Denmark & Copenhagen University, Faculty of Health and Medical Sciences**

Master's thesis: *Development of a validation framework for simultaneous EEG and MRI*. The project concerned technical challenges in simultaneous EEG and MRI acquisitions. The project was carried out at Hvidovre Hospital. Grade 12 (Danish 7 point scale).  
Optional courses in medical imaging systems and transport phenomena (flow, diffusion etc.). As a warm-up for my master's project, I had a 5 ECTS special course (project) about EEG-fMRI at Hvidovre Hospital.  
Weighted GPA (not including Master's thesis): 10.5 (Danish 7 point scale).

Spring 2010

**Exchange student at Rensselaer Polytechnic Institute, Troy, New York, USA.**

Courses in fluid dynamics and microscopy.

September 2006 –  
June 2009

**BSc in biomedical engineering, Technical University of Denmark & Copenhagen University, Faculty of Health and Medical Sciences**

Bachelor thesis: *Modeling and Simulation of Glucose-Insulin Dynamics*. Grade 10 (Danish 7 point scale).  
Courses at DTU in mathematics, physics, electronics, signal processing, algorithms and more. Courses at Copenhagen University in human biology and diseases, cell biology, biomechanics of human movement and more.  
Weighted GPA (not including Bachelor thesis) : 10.8 (Danish 7 point scale)

## JOURNAL PAPERS

M. Andersen, K. H. Madsen, L. G. Hanson, V. Boer, T. van der Velden, D. Klomp, J. Wezel, M. van Osch, A. Webb, M. Versluis. Measuring motion-induced B0-fluctuations in the brain using field probes. *Magnetic Resonance in Medicine*, in press, 2015.

## CONFERENCE ABSTRACTS

M. Andersen, K. H. Madsen, L. G. Hanson. Prospective motion correction for MRI using EEG-equipment. "Proc. of the ISMRM 23<sup>rd</sup> Annual Meeting", 4254, 2016.

M. Andersen, K. H. Madsen, L. G. Hanson, V. Boer, T. van der Velden, D. Klomp, J. Wezel, M. van Osch, A. Webb, M. Versluis. Placement of field probes for stabilization of breathing-induced B<sub>0</sub>-fluctuations in the brain. "Proc. of the ISMRM 22<sup>nd</sup> Annual Meeting", 2245, 2015.

M. Andersen, K. H. Madsen, L. G. Hanson, V. Boer, T. van der Velden, D. Klomp, J. Wezel, M. van Osch, M. Versluis. Mapping and correcting respiration-induced field changes in the brain using fluorine field probes. "Proc. of the ISMRM 22<sup>nd</sup> Annual Meeting", 1391, 2014.

M. Andersen and L. G. Hanson. A phantom based validation framework for EEG-fMRI acquisition methods. "Proc. of the ESMRMB 29<sup>th</sup> Annual Meeting", 626, 2012.

## LANGUAGES

Fluent in Danish and English

## OTHER

Received Novo Scholarship 2012, which purpose is to allow selected students at universities in Denmark and Lund University to devote full time to their master's thesis. With the scholarship followed an obligation as a 'Novo science ambassador' (<http://danishsciencefactory.dk/novo-science-ambassad%C3%B8rer>), and in that context I have lectured high school students about the physics of MRI.