

Martijn D. Steenwijk

Curriculum Vitae

Personalia

Martijn Daniël Steenwijk
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Date of birth: August 22, 1986
Citizenship: Dutch

Employment

2010–present *Ph.D. Student*
VU University Medical Center, Amsterdam

Education

M.Sc. Biomedical Engineering - Medical Imaging, cum laude, 2010
Delft University of Technology
Thesis: Integrated visual analysis for heterogeneous datasets in cohort studies
– Application to neuropsychiatric SLE
Committee: Prof. Albert M. Vossepoel, Prof. Mark. A. van Buchem, Charl P. Botha, Marco Loog, Julien Milles
Relevant courses: Physiological Systems, Medical Imaging, Magnetic Resonance Imaging, Medical Visualization, Medical Technology, Quality Assurance and Risk Analysis, Pattern Recognition, Data Visualization, Advanced Digital Image Processing

B.Sc. Electrical Engineering, 2008
Delft University of Technology
Thesis: Football detection by means of radar
Committee: Prof. Peter Hoogeboom, Koen L.M. Bertels, Ioan E. Lager
Minor courses: Algorithms and Data Structures, Electronic Circuits, Embedded Systems, Information Processing, Introduction Microwave Techniques, Power Electronics and Electromagnetic Compatibility

Other

Basiscursus Regelgeving en Organisatie voor Klinisch onderzoekers (BROK).
Certification for knowledge of EU laws and regulations concerning research involving human subjects, and Good Clinical Practice (GCP). February 2011.

Publications

Peer-reviewed full papers in international conference proceedings

M.D. Steenwijk, J. Milles, M.A. van Buchem, J.H.C. Reiber, and C.P. Botha. Integrated visual analysis for heterogeneous datasets in cohort studies. In *IEEE VisWeek Workshop on Visual Analytics in Health Care*, October 2010.

Conference abstracts

K.S. Cover, W.L. de Graaf, A. Lopez Soriano, J.P.A. Kuijter, **M.D. Steenwijk**, J.J.G. Geurts, B.W. van Dijk, H. Vrenken, and F. Barkhof. Direct comparison of the quality of 32 echo MRI T2 decays used to measure myelin water in vivo at 3T and 1.5T using the decay roughness measure. In *ECTRIMS/ACTRIMS Meeting 2011*, October 2011.

M.D. Steenwijk, M.J. Versluis, M.A. van Buchem, J.H.C. Reiber, A. Webb, and J. Milles. Forward-Field Calculations Improve Contrast of Unwrapped MR Phase Images. In *ISMRM-ESMRMB Joint Annual Meeting 2010*, May 2010.

Dutch publications

M.D. Steenwijk, M.A. van Buchem, G.M. Steup-Beekman, S.C.A. Steens, T.W.J. Huizinga, and J. Luyendijk. Met MRI 'kijken' naar neuropsychiatrische SLE. In *Lupus Magazine*, March 2010.

Research Experience

Undergraduate Work

Graduation Project, Nov 2009 – Aug 2010

Division of Image Processing (LKEB), Leiden University Medical Center

Design and implementation of a hypothesis generating framework in which multi-modal, multi-timepoint and multi-variate data can be visually explored across patients. The implementation focused on neuropsychiatric systemic lupus erythematosus, which is a rheumatic disease with very heterogeneous symptoms. The framework was however applicable and scalable to other diseases.

Traineeship, Sep 2009 – Nov 2009

Division of Image Processing (LKEB), Leiden University Medical Center

Implemented Fourier phase unwrapping on the console of the 7T whole body MRI-system to support online generation of susceptibility-weighted images. The project also included the investigation of more advanced techniques such as geometry-dependent artifact-corrected phase unwrapping.

Graduate Class Projects

- *Semi-automated lumen segmentation of the carotid artery bifurcation*
Project in Spring 2010. Implemented and evaluated a custom semi-automated algorithm for lumen segmentation of the carotid artery bifurcation.
- *Feature tracking and handwritten digit recognition*
Joint work with Harold van Zandrbrink in Spring 2009. Designed and implemented a web cam sourced real-time feature tracking system. By training and addition of a classifier, the system recognized handwritten digits as expressed by the user. This resulted in an interface where the system presents simple arithmetic to the user, after which the user expresses the answer with his fingertip and the system will evaluate correctness.
- *Intra-patient prone to supine colon registration for virtual colonoscopy*
Project in Winter 2009. Designed and implemented an algorithm to perform prone to supine colon registration using centerline extraction and non-linear field deformations.

Grants

Aug 2011 *Three projects related to information supply regarding lupus erythematosus*, on behalf of the Dutch Lupus Patient's Association, in total €16,000. *Dutch Arthritis Association (Reumafonds)*. Together with ms. E. Zijlstra.

Extracurricular

2010–present *Vice-chair*
Lupus Patiënten Groep (Dutch Lupus Patient's Association)

2007–2010 *Board Member*
Lupus Patiënten Groep (Dutch Lupus Patient's Association)

Personal Goals

To work in a multidisciplinary medical environment with a strong focus on translational research and new possibilities in healthcare

To form a bridge between different fields in healthcare (i.e. patients, physicists, researchers, technicians, and funders)

Miscellaneous

Programming Skills

Proficient: C, C++, VTK, IDL, LaTeX, Matlab, PHP, SQL

Familiar: Python, Java, ITK, assembly, VHDL, ASP, Ajax, jQuery

Languages

Native: Dutch

Proficient: English

Reading: French, German

Personal Skills

Social, good listener, helpful, easygoing, bridge builder, problem solver, independent

Hobbies

Hiking, photography, motorcycling, geocaching

References available upon request.

August 29, 2011