Curriculum vitae

Name: Frida Sandberg (neé Nilsson)
Title: Master of Science in electrical engineering,
Tekn. Lic. in signal processing
Date of birth: 770507-4065
Sex: Female
Civil state: Married, two children born 2005 and 2007
Nationality: Swedish

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Academic degrees

Nov 2010: Planned doctoral dissertation in signal processing, Dept. of Electrical and Information Technology, Lund University, Sweden
Jan 2007: Licentiate in signal processing, Dept. of Electroscience, Lund University, Sweden
Aug 2003: Master of Science in electrical engineering, Lund University, Sweden

Education /Employment

2003-2010: PhD student, Dept. of Electrical and Information Technology, Lund University, Sweden
(Parental leave May 2005 - Jan 2006 and Oct 2007 – Aug 2008)
1999-2003: Electrical engineering, Lund University, Sweden
1997-1999: Civil engineering, Lund University, Sweden
1994-1995: Mechanicville high school, Mechanicville, NY state, USA
1993-1997: Natural science programme, Söderslättsgymnasiet, Trelleborg, Sweden

Teaching experience

- Algorithms in signal processors (project course), developed a new theme and supervised projects 2005-2010.
- Digital signal processing, exercises and labs 2004.

Pedagogical education

- Introduction to teaching and learning in higher education, 2 weeks, 2006-2007

Reviewer assignments

- IEEE Transactions on Biomedical Engineering
- Computers in Biology and Medicine

Collaborations that has resulted in joint publications

- Prof. Andreas Bollman and Dr. Daniela Husser, Dept. of Cardiology, Heart Center, Liepzig, Germany.

- Dr. Valentina Corino and Prof. Luca Mainardi, Dept. of Bioengineering, Politecnico di Milano, Milan, Italy.

- Dr. Raul Alcaraz and Dr. José Joaquín Rieta, Dept. of Electronic Engineering, Universidad Politécnica de Valencia, Valencia, Spain.

- Dr. Fredrik Holmqvist and Dr. Pyotr Platonov, Dept. of Cardiology, Lund University, Lund, Sweden

Board member

- Dept. of Electrical and Information Technology 2009-2010

Publications

Book Chapters

1. F. Sandberg, M. Stridh, L. Sörnmo:
   Time-frequency analysis of atrial fibrillation
   Understanding Atrial Fibrillation: The Signal Processing Contribuiton, L. Mainardi, L. Sörnmo, and S. Cerutti (eds), Morgan & Claypool Publ., pp 81-102, 2008.

Journal Articles

1. F. Nilsson, M. Stridh, A. Bollmann, L. Sörnmo:
   Predicting spontaneous termination of atrial fibrillation using the surface ECG
   Medical Engineering & Physics, Vol. 28, pp. 802-808, 2006.
   (**4th most cited paper in the journal 2006-2008**)

2. F. Sandberg, M. Stridh, L. Sörnmo:
   Frequency tracking of atrial fibrillation using hidden Markov models.
   IEEE Transactions on Biomedical Engineering, Vol. 55, pp. 502-511, 2008.

3. F. Sandberg, A. Bollman, D. Husser, M. Stridh, L. Sörnmo:
   Circadian variation in dominant atrial fibrillation frequency in persistent atrial fibrillation
   Physiological Measurement, Vol. 31, pp. 531-542, 2010.

4. R. Petersson, F. Sandberg P. Platonov and F. Holmqvist
   Non-invasive estimation of organization in atrial fibrillation as a predictor of sinus rhythm maintenance
   Journal of Electrocardiology, (accepted).

5. R. Alcaraz, F. Sandberg, L. Sörnmo, and J.J. Rieta:
   Classification of paroxysmal and persistent atrial fibrillation in ambulatory ECG recordings
   Under revision for publication in IEEE Transactions on Biomedical Engineering.

Manuscripts under preparation

1. F. Sandberg, V. Corino, L. Mainardi and L. Sörnmo
   Model-based analysis of the ventricular response during atrial fibrillation

Conference Papers (Peer reviewed)

1. F. Nilsson, M. Stridh, L. Sörnmo:
   Comparison of spectral properties in atrial signals using different QRST cancellation techniques,
   In Proc. IFMBE, Ischia, Italy, June 2004.

2. F. Nilsson, M. Stridh, A. Bollmann, L. Sörnmo:
   Predicting spontaneous termination of atrial fibrillation with time-frequency information,
   In Proc. Computers in Cardiology 2004, Chicago, USA, Vol. 31, pp. 657-660, Sept. 2004.

3. F. Sandberg, M. Stridh, L. Sörnmo:
   Frequency tracking of atrial fibrillation using hidden Markov models,
   in Proc. 28th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS '06, New York, USA, pp. 1406-1409, Sept. 2006.

4. R. Alcaraz, F. Sandberg, L. Sörnmo, JJ. Rieta:
   Organization tracking of long-term atrial fibrillation recordings: Differences between paroxysmal and persistent episodes,
   in Proc. Computers in Cardiology 2009, Park City, USA, Vol. 36, Sept. 2009.

5. F. Sandberg, A. Bollmann, D. Husser, M. Stridh, L. Sörnmo:
   Q*uantitative analysis of circadian variation in Atrial Fibrillation Frequency,*
   in Proc. Computers in Cardiology 2009, Park City, USA, Vol. 36, Sept. 2009.

6. R. Petersson, F. Sandberg, JJ. Rieta, R. Alcaraz, P. Platonov and F.Holmqvist:
   Non-invasive estimation of organization in atrial fibrillation as a predictor of sinus rhythm maintenance
   International Congress on Electrocardiology, Lund, Sweden, June 2010.

7. F. Sandberg, V. Corino, L. Mainardi and L. Sörnmo:
   Ventricular response during AF - A mathematical model of the AV nodal function
   International Congress on Electrocardiology, Lund, Sweden, June 2010.

8. F. Sandberg, R. Alcaraz, JJ. Rieta and L. Sörnmo:
   Non-invasive estimation of organization evidences differences between paroxysmal and persistent AF
   International Congress on Electrocardiology, Lund, Sweden, June 2010.

9. V. Corino, F. Sandberg, L. Sörnmo and L. Mainardi,
   A mathematical model of atrioventricular node during atrial fibrillation
   in Proc. Computing in Cardiology, Belfast, Northern Ireland, Sept. 2010.

10. R. Alcaraz, F. Sandberg, L. Sörnmo and JJ. Rieta,
    Application of frequency and sample entropy to discriminate long-term recordings of paroxysmal and persistent atrial fibrillation
    in Proc. 32th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS '10, Buenos Aires, Argentina, Sept. 2010. **(invited paper)**

Dissertation

F. Sandberg
Novel approaches to ECG-based modeling and characterization of atrial fibrillation
ISSN 1654-790X, No. 26, 2010.

Licentiate thesis

F. Sandberg:
Time-frequency analysis of atrial fibrillation
ISSN 1402-8662, No. 65, 2007.

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