

Curriculum Vitae

Trygve Eftestøl

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Present Position

10.04.2008 - Professor in Information and Communication Technology, Department of Electrical and Computer Engineering, Faculty of Science and Technology, University of Stavanger (UiS).

Previous Positions

- 21.02.2001-09.04.2008 - Associate Professor at University of Stavanger (UiS).
- 31.01.1996 - 30.06.2000: Research fellow (Ph.D. student) at Stavanger University College.
- 01.02.1996 - 31.05.2001: Research engineer (part time)- Research and Development Department at Laerdal Medical AS, Stavanger.
- 15.02.1995 - 31.01.1996: Engineer - Research and Development Department at Laerdal Medical AS, Stavanger.

Research Visit

04.05.1998 - 28.08.1998: Visiting Cardiology Products Department at Hewlett-Packard Medical Products Group, Andover, Massachusetts, USA.

Education

- 2000: Ph.D. degree in signal processing from the Electrical and Computer Engineering Department at the Norwegian University of Science and Technology, NTNU, in collaboration with HiS, Stavanger, Norway. Title of thesis: *Signal Analysis of Out-of-hospital Cardiac Arrest Electrocardiograms for Decision Support during Cardiopulmonary Resuscitation.*
- 1994 M.Sc. degree from Electrical and Computer Engineering department at HiS, Stavanger, Norway. Title of thesis: *Classification of Cardiac Arrhythmias in Electrocardiograms: Filter Bank Analysis and Signal Modelling (Klassifikasjon av hjerterytmer i EKG signaler: Filterbankanalyse og Signalmodellering).*

Research

My research has focused on signal analysis, pattern recognition and regression based modelling of biomedical signals in the setting of *advanced life support, electrophysiological studies of heart infarction patients* and *genomic signal processing.*

Publications:

Journal publications, peer reviewed: 40

Conference publications (full papers in proceedings), peer reviewed: 36

Conference publications (abstracts in journals), peer reviewed: 32

Research award: Scana's Research Award 2008

Collaboration with Norwegian Research Groups:

- *The Research and Development Department* of Laerdal Medical of Stavanger, – a leading company engaged in various products for emergency treatment.
- *The Cardiopulmonary Resuscitation Research Group*, Institute for Experimental Medical Research, Ullevaal University Hospital, Oslo, Norway, led by P.A. Steen, Professor of emergency medicine[1, 3, 5, 4, 6].
- *The Group for Cardiovascular and Emergency Medical Research*, Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway, represented by E. Skogvoll, Associate professor[13, 10].
- *The Cardiology Department* at Stavanger University Hospital, represented by Dr. L. Woie and Dr. Stein Ørn[9, 7, 8].

Collaboration with Foreign Research Groups:

- *The Signal Processing Research Group*, Department of Electronics and Telecommunications, University of the Basque Country, Spain, represented by U. Irusta, Assistant Lecturer.[16, 4, 5]
- *The Department of Anaesthesiology Critical Care and Emergency Medicine*, the Leopold-Franzens-University Innsbruck, led by Professor V. Wenzel.
- *Universitätsklinik für Notfallsmedizin*, Allgemeines Krankenhaus der Stadt Wien, led by F. Sterz, Professor of emergency medicine.

Invited Papers: in *Modelling Identification and Control* and in *Expert Review of Cardiovascular Therapy* (2003).

Invited Speaker: at *HLR 2003 conference, Stavanger, Norway, 2003*, *Seminary at Stavanger University College, Stavanger, Norway 2003*, *Servomøtet 2004, Norsk forening for automatisering, Stavanger, Norway, 2004*, *Forskningsdagene 2004, Stavanger, Norway, 2004*, *Åpen fagdag 2004, Stavanger, Norway, 2004* and *NOBIMs Industriseminar 2005*, *ERC 2006 conference, Stavanger, Norway, 2006*, *Symposium on ECG signal processing, University of the Basque Country, Bilbao, Spain 2007*.

Organizational work: board member of the Norwegian society for signal processing *Norsk Forening for Signalbehandling (NORSIG)*. Member of the the organising committee for NORSIG's national conference in 2005.

Invited Book Chapters: in *Cardiac arrest: The science and practice of resuscitation medicine - Second edition*.

Journal Reviewer: for the *IEEE Transactions on Biomedical Engineering, Physiological Measurement*, the *Signal Processing International Journal*, *Critical Care Medicine* and *Resuscitation*.

Expert Reviewer: for the evidence evaluation process for the *2005 and 2010 International Consensus Conference on cardiopulmonary resuscitation and emergency cardiovascular care science with treatment recommendations* appointed by the International Liaison Committee on Resuscitation, European Resuscitation Council and American Heart Association.

Grant Application Reviewer: for the *Austrian Science Fund (FWF)*.

Research Management

Initiation and management of research: In the network of resuscitation research I have been responsible for activities involving signal analysis.

I am currently head of the *Biomedical data analysis group* at the University of Stavanger.

I was the project leader of a Norwegian Research Foundation supported project within resuscitation research.

Supervision of PhD and Master students: I have been chief supervisor for four Ph.D. student who defended their theses in the period 2004-2014. Presently, I am co-supervisor for three PhD students. I have supervised several M.Sc. students on diploma theses.

Academic Management

Department level activities: Leader for the *Signal and Image Processing Group* at the department

Faculty level activities: Member of *the Doctoral Educational Committee* at the Faculty of Science and Technology, The University of Stavanger (2004-2007).

References

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- [2] T. Eftestøl and L. D. Sherman, “Towards the automated analysis and database development of defibrillator data from cardiac arrest,” *BioMed Research International*, 2014. doi:10.1155/2014/276965.
- [3] E. Alonso, T. Eftestøl, E. Aramendi, J. Kramer-Johansen, E. Skogvoll, and T. Nordseth, “Beyond ventricular fibrillation analysis: Comprehensive waveform analysis for all cardiac rhythms occurring during resuscitation,” *Resuscitation*, vol. 85, no. 11, pp. 1541–1548, 2014.
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- [9] L. P. Kotu, K. Engan, K. Skretting, F. Måløy, S. Ørn, L. Woie, and T. Eftestøl, “Probability mapping of scarred myocardium using texture and intensity features in CMR images,” *BioMedical Engineering OnLine*, 2013. DOI:10.1186/1475-925X-12-91.
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