Towards airflow sensors with energy harvesting and wireless transmitting properties

The rapidly growing demand for even more detailed low-cost measurements of weather and environmental conditions, including wind flow, asks for self-sustained energy solutions that eliminate the need for external recharge or replacement of batteries. Today’s wind measurement market is limited to traditional anemometers, ultrasonic measurement or expensive LIDAR (Light Imaging, Detection and Ranging) systems. This paper presents the initial design considerations for a low-cost combined air speed and wind direction sensor, which harvests energy to drive it and to power the wireless transmission of system configurations and measurements. An energy-budget for this transmission is included.

General information
State: Submitted
Organisations: Center for Bachelor of Engineering Studies, Afdelingen for Informatik, Novitek Solutions ApS, Aalborg University
Authors: Blaszczyk, T. (Intern), Sørensen, J. A. (Intern), Lynggaard, P. (Forskerdatabase), Larsen, K. (Ekstern)
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Advanced Materials Letter
ISSN (Print): 0976-3961
Ratings:
Scopus rating (2016): SJR 0.41 SNIP 0.882
Scopus rating (2015): SJR 0.451 SNIP 0.917 CiteScore 1.52
Scopus rating (2014): SJR 0.585 SNIP 1.031 CiteScore 1.79
Scopus rating (2013): SJR 0.523 SNIP 1.276 CiteScore 2.01
Scopus rating (2012): SJR 0.381 SNIP 0.674 CiteScore 1.37
Scopus rating (2011): SJR 0.502 SNIP 1.518
Original language: English
Publication: Research - peer-review › Journal article – Annual report year: 2018

Standarder, sikkerhed og kvalitet i sundhedsvæsenet.

General information
State: Published
Organisations: Center for Bachelor of Engineering Studies, Center for Information Technology and Electronics, Department of Electrical Engineering, Siemens A/S, Pallas Informatik, Copenhagen University Hospital
Authors: Sørensen, J. A. (Intern), Michael, C. G. (Ekstern), Andersen, J. P. (Ekstern), Børresen, B. (Ekstern)
Publication date: 2012
2011 Summer School on Healthcare Technology - HCT 2011

The aim of the course is introduction to biomedical, technological and health care application areas, which form the basis for the next generation of telemedicine systems.

The course consists of lectures from the medical, technological and industrial areas related to telemedicine and supplemented by visit at company working with healthcare technology. The course will also have hands-on programming sessions with sensor systems for measuring human physiological parameters.

Course keywords:
- Human physiology, anatomy and the large disease groups: Cancer, diabetes, blood vessel calcifications, heart diseases and chronic lung disease.
- Measuring human physiological parameters.
- Analysis of biomedical signals.
- Wireless systems as a tool for communicating measured human physiological parameters for clinical monitoring and rehabilitation, targeting telemedicine systems.
- Examples of existing and emerging medical and rehabilitation systems e.g. for clinical diagnosis and monitoring of the large disease groups, using telemedicine.

Course sessions, group work, project work, some course sessions hosted by int. company within healthcare technology and research group within telemedicine.

Combines the learning of new methods with the applications of these methods.

Semester: August 2011
Extent: 7.5 ects

Digital Communication and Modulation

The course presents the fundamental principles for digital communication, e.g. fixed-wire modems or wireless communication channels, as applied in mobile phones, wireless computer networks or wireless systems in intelligent houses.

Based on the functional blocks of a digital communication system, the fundamental principles for modulation and detection in Gaussian noise is treated.

This includes the principles for the determination of the bit-error rate for a digital communication system.

During the course, a selection of small Matlab exercises are prepared, for simulation of parts of a communication system.

Having passed the course, the student will be able to accomplish the following, within the areas shown below:

Model for Communication System.
Prepare and explain the functional block in a digital communication system, corresponding to the specific course contents.

Model for Communication Channel.
Prepare and explain a model for a communication channel, corresponding to the specific course contents.

Modulation Methods.
Explain the properties of digital modulation methods, corresponding to the specific course contents.

Intersymbol Interference.
Explain intersymbol interference, corresponding to the specific course contents.
Prepare and explain methods for the reduction of intersymbol interference, corresponding to the specific course contents.

Detection.
Prepare and explain methods for the detection of digital information symbols, corresponding to the specific course contents.

Performance of a Digital Communication System.
Prepare and explain a model for bit-error probability versus the energy used per bit and channel noise, corresponding to the specific course contents.

System Simulation.
Prepare and explain a simulation program in Matlab for simulating a minor part of a digital communication system.

Sessions in class with active participation by the students. The time will be divided between lectures and the students solving problems, including simulating digital communication building blocks in Matlab.

Combines lectures and hands-on work.

Semester: F2011
Extent: 7.5 ects

General information
State: Published
Organisations: Center for Bachelor of Engineering Studies, Center for Information Technology and Electronics
Authors: Sørensen, J. A. (Intern)
Publication date: 2011

Publication information
Original language: English
Main Research Area: Technical/natural sciences
Publication: Communication › Other contribution – Annual report year: 2011

Digital Communication and Modulation
The course presents the fundamental principles for digital communication, e.g. fixed-wire modems or wireless communication channels, as applied in mobile phones, wireless computer networks or wireless systems in intelligent houses.

Based on the functional blocks of a digital communication system, the fundamental principles for modulation and detection in Gaussian noise is treated. This includes the principles for the determination of the bit-error rate for a digital communication system.

During the course, a selection of small Matlab exercises are prepared, for simulation of parts of a communication system.

Having passed the course, the student will be able to accomplish the following, within the areas shown below:

Model for Communication System.
Prepare and explain the functional block in a digital communication system, corresponding to the specific course contents.

Model for Communication Channel.
Prepare and explain a model for a communication channel, corresponding to the specific course contents.

Modulation Methods.
Explain the properties of digital modulation methods, corresponding to the specific course contents.

Intersymbol Interference.
Explain intersymbol interference, corresponding to the specific course contents.
Prepare and explain methods for the reduction of intersymbol interference, cor-
responding to the specific course contents.

Detection.
Prepare and explain methods for the detection of digital information symbols, corresponding to the specific course contents.

Performance of a Digital Communication System.
Prepare and explain a model for bit-error probability versus the energy used per bit and channel noise, corresponding to the specific course contents.

System Simulation.
Prepare and explain a simulation program in Matlab for simulating a minor part of a digital communication system.

Sessions in class with active participation by the students. The time will be divided between lectures and the students solving problems, including simulating digital communication building blocks in Matlab.

Combines lectures and hands-on work.

Semester: E2011
Extent: 7.5 ects

Discrete Mathematics
The objectives of Discrete Mathematics (IDISM2) are: The introduction of the mathematics needed for analysis, design and verification of discrete systems, including the application within programming languages for computer systems.

Having passed the IDISM2 course, the student will be able to accomplish the following:
- Understand and apply formal representations in discrete mathematics.
- Understand and apply formal representations in problems within discrete mathematics.
- Understand methods for solving problems in discrete mathematics.
- Apply methods for solving problems in discrete mathematics.

Having completed this the student is able to carry out the following:

Expressions and sets:
Define a set; define a logic expression; negate a logic expression; combine logic expressions; construct a truth table for a logic expression; apply reduction rules for logic expressions. Apply these concepts to new problems.

Relations and functions:
Define a product set; define and apply equivalence relations; construct and apply functions. Apply these concepts to new problems.

Natural numbers and induction:
Define the natural numbers; apply the principle of induction to verify a selection of properties of natural numbers. Apply these concepts to new problems.

Division and factorizing:
Define a prime number and apply Euclid’s algorithm for factorizing an integer.

Regular languages:
Define a language from the elements of a set; define a regular language; form strings from a regular language; construct examples on regular languages. Apply these concepts to new problems.

Finite state machines:
Define a finite state machine as a 6-tuble; describe simple finite state machines by tables and graphs; pattern recognition by finite state machines; minimizing the number of states in a finite state machine; construct a finite state machine for a given application. Apply these concepts to new problems.
The teaching in Discrete Mathematics is a combination of sessions with lectures and students solving problems, either manually or by using Matlab. Furthermore a selection of projects must be solved and handed in during the course.

Semester: E2011
Extent: 5 ects

**General information**
State: Published
Organisations: Center for Bachelor of Engineering Studies, Center for Information Technology and Electronics
Authors: Sørensen, J. A. (Intern)
Publication date: 2011

**Publication information**
Original language: English
Main Research Area: Technical/natural sciences
Publication: Communication › Other contribution – Annual report year: 2011

**Discrete Mathematics**
The objectives of Discrete Mathematics (IDISM2) are: The introduction of the mathematics needed for analysis, design and verification of discrete systems, including the application within programming languages for computer systems.

Having passed the IDISM2 course, the student will be able to accomplish the following:
- Understand and apply formal representations in discrete mathematics.
- Understand and apply formal representations in problems within discrete mathematics.
- Understand methods for solving problems in discrete mathematics.
- Apply methods for solving problems in discrete mathematics.

Having completed this the student is able to carry out the following:

**Expressions and sets:**
Define a set; define a logic expression; negate a logic expression; combine logic expressions; construct a truth table for a logic expression; apply reduction rules for logic expressions. Apply these concepts to new problems.

**Relations and functions:**
Define a product set; define and apply equivalence relations; construct and apply functions. Apply these concepts to new problems.

**Natural numbers and induction:**
Define the natural numbers; apply the principle of induction to verify a selection of properties of natural numbers. Apply these concepts to new problems.

**Division and factorizing:**
Define a prime number and apply Euclid’s algorithm for factorizing an integer.

**Regular languages:**
Define a language from the elements of a set; define a regular language; form strings from a regular language; construct examples on regular languages. Apply these concepts to new problems.

**Finite state machines:**
Define a finite state machine as a 6-tuple; describe simple finite state machines by tables and graphs; pattern recognition by finite state machines; minimizing the number of states in a finite state machine; construct a finite state machine for a given application. Apply these concepts to new problems.

The teaching in Discrete Mathematics is a combination of sessions with lectures and students solving problems, either manually or by using Matlab. Furthermore a selection of projects must be solved and handed in during the course.

Semester: F2011
Extent: 5 ects

**General information**
State: Published
Organisations: Center for Bachelor of Engineering Studies, Center for Information Technology and Electronics
Authors: Sørensen, J. A. (Intern)
Publication date: 2011

**Publication information**
Eksempler på krav til næste generations sundhedsteknologingeniører

General information
State: Published
Organisations: Center for Bachelor of Engineering Studies, Professionshøjskolen Metropol, Copenhagen University Hospital
Authors: Sørensen, J. A. (Intern), Hauge, A. (Intern), Baden-Kristensen, K. (Intern), Holst-Christensen, B. (Intern), Tolstrup Jensen, J. (Ekstern), Jeppesen, L. (Ekstern), Sølvkjær, M. (Ekstern), Børresen, B. (Ekstern)
Pages: 73-75
Publication date: 2011

Host publication information
Title of host publication: Profession og teknologi: Videnbasering, udvikling og anvendt forskning i praksis
Editors: Hørdam, B., Lauritsen, J., Lubanski, N.
ISBN (Print): 978-87-7008-017-0
Main Research Area: Technical/natural sciences
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2011

Ingeniørpraktik

General information
State: Published
Organisations: Center for Bachelor of Engineering Studies, Center for Information Technology and Electronics
Authors: Sørensen, J. A. (Intern)
Publication date: 2011

Publication information
Original language: Danish
Main Research Area: Technical/natural sciences
Publication: Communication › Other contribution – Annual report year: 2011

Medicoteknik 3

General information
State: Published
Organisations: Center for Bachelor of Engineering Studies, Center for Information Technology and Electronics, Center for Continuing Education
Authors: Sørensen, J. A. (Intern), Munck-Fairwood, R. (Intern)
Publication date: 2011

Publication information
Original language: Danish
Main Research Area: Technical/natural sciences
Publication: Communication › Other contribution – Annual report year: 2011

Medicoteknik 4

General information
State: Published
Organisations: Center for Bachelor of Engineering Studies, Center for Information Technology and Electronics, Professionshøjskolen Metropol, Center for Bachelor of Engineering Studies
Authors: Sørensen, J. A. (Intern), Sørensen, J. K. (Intern), Jeppesen, L. (Ekstern), Ladelund, S. (Ekstern), Petersen, J. (Ekstern)
Publication date: 2011

Publication information
Original language: Danish
Main Research Area: Technical/natural sciences
Semesterprojekt 3: Distribueret patientdatasystem og simuleringssystem til klinisk overvågning af fysiologisk data

General information
State: Published
Organisations: Center for Bachelor of Engineering Studies, Center for Information Technology and Electronics, Professionshøjskolen Metropol, Radiografuddannelsen
Authors: Sørensen, J. A. (Intern), Holst-Christensen, B. (Intern), Tolstrup Jensen, J. (Ekstern), Pilegaard Knudsen, M. (Ekstern)
Publication date: 2011

Semesterprojekt 4: Medicinsk teknologivurdering

General information
State: Published
Organisations: Center for Bachelor of Engineering Studies, Center for Information Technology and Electronics
Authors: Sørensen, J. A. (Intern), Baden-Kristensen, K. (Intern), Holst-Christensen, B. (Intern)
Publication date: 2011

Telemedicin 1

General information
State: Published
Organisations: Center for Bachelor of Engineering Studies, Center for Information Technology and Electronics, Center for Continuing Education, University of Copenhagen
Authors: Sørensen, J. A. (Intern), Munck-Fairwood, R. (Intern), Holst-Christensen, B. (Intern), Phanareth, K. (Ekstern)
Publication date: 2011

Digital Communication and Modulation
Fundamental principles in modern digital communication system like modems and wire- and wireless transmission over physical channels.

Class room sessions and projects.

Semester: Autumn 2010
Extent: 7.5 ects
Class size: 18

General information
State: Published
Organisations: Center for Bachelor of Engineering Studies
Authors: Sørensen, J. A. (Intern)
Publication date: 2010
**Digital Communication and Modulation**
Fundamental principles in modern digital communication system like modems and wire- and wireless transmission over physical channels.

Class room sessions and projects.

Semester: Spring 2010  
Extent: 7.5 ects  
Class size: 9

**General information**
State: Published  
Organisations: Center for Bachelor of Engineering Studies  
Authors: Sørensen, J. A. (Intern)  
Publication date: 2010

**Publication information**
Original language: English  
Main Research Area: Technical/natural sciences  
Publication: Communication › Other contribution – Annual report year: 2010

**Discrete Mathematics**
The introduction of the mathematics needed for analysis, design and verification of discrete systems, including applications within programming languages for computer systems.

Course sessions and project work.

Semester: Autumn 2010  
Extent: 5 ects  
Class size: 15

**General information**
State: Published  
Organisations: Center for Bachelor of Engineering Studies  
Authors: Sørensen, J. A. (Intern)  
Publication date: 2010

**Publication information**
Original language: English  
Main Research Area: Technical/natural sciences  
Publication: Communication › Other contribution – Annual report year: 2010

**Discrete Mathematics**
The introduction of the mathematics needed for analysis, design and verification of discrete systems, including applications within programming languages for computer systems.

Course sessions and project work.

Semester: Spring 2010  
Extent: 5 ects  
Class size: 18

**General information**
State: Published  
Organisations: Center for Bachelor of Engineering Studies  
Authors: Sørensen, J. A. (Intern)  
Publication date: 2010

**Publication information**
Original language: English  
Main Research Area: Technical/natural sciences  
Publication: Communication › Other contribution – Annual report year: 2010
Faglig bedømmelse af ansøgere til stillinger ved IT-faggruppen

General information
State: Published
Organisations: Center for Bachelor of Engineering Studies
Authors: Sørensen, J. A. (Intern)
Number of pages: 22
Publication date: 2010

Publication information
Original language: English
Main Research Area: Technical/natural sciences
Publication: Communication › Other contribution – Annual report year: 2010

Medicoteknik 3

General information
State: Published
Organisations: Center for Bachelor of Engineering Studies
Authors: Sørensen, J. A. (Intern), Sørensen, J. K. (Intern), Munck-Fairwood, R. (Intern)
Number of pages: 8
Publication date: 2010

Publication information
Original language: Danish
Main Research Area: Technical/natural sciences
Publication: Communication › Other contribution – Annual report year: 2010

Præsentation af status for aftagerpanel: Diplomingeniør i sundhedsteknologi

General information
State: Published
Organisations: Center for Bachelor of Engineering Studies
Authors: Sørensen, J. A. (Intern)
Number of pages: 33
Publication date: 2010

Publication information
Original language: Danish
Main Research Area: Technical/natural sciences
Publication: Communication › Other contribution – Annual report year: 2010

Præsentation af status for udvikling af uddannelse: Diplomingeniør i sundhedsteknologi

General information
State: Published
Organisations: Center for Bachelor of Engineering Studies
Authors: Sørensen, J. A. (Intern)
Number of pages: 59
Publication date: 2010

Publication information
Original language: Danish
Main Research Area: Technical/natural sciences
Publication: Communication › Other contribution – Annual report year: 2010

Rapport til Undervisningsministeriet vedr. status for udvikling af uddannelsen: Diplomingeniør i sundhedsteknologi

General information
State: Published
Organisations: Center for Bachelor of Engineering Studies
Authors: Sørensen, J. A. (Intern)
Number of pages: 8
Experimental Comparison of Signal Subspace Based Noise Reduction Methods

The signal subspace approach for non-parametric speech enhancement is considered. Several algorithms have been proposed in the literature but only partly analyzed. Here, the different algorithms are compared, and the emphasis is put onto the limiting factors and practical behavior of the estimators. Experimental results show that the signal subspace approach may lead to a significant enhancement of the signal to noise ratio of the output signal.

General information
Improved diagnosis of MV paper-insulated cables using signal analysis

General information
State: Published
Organisations: Department of Electric Power Engineering, Department of Informatics and Mathematical Modeling, DEFU a.m.b.a.
Authors: Villefrance, R. (Intern), Holbøll, J. T. (Intern), Sørensen, J. A. (Intern), Jørgensen, H. J. (Ekstern)
Publication date: 1999

Host publication information
Title of host publication: Proceedings of Fifth International Conference on Insulated Power Cables
Place of publication: Versailles
Publisher: Jicable
Main Research Area: Technical/natural sciences
Conference: 5th International Conference on Insulated Power Cables, Versailles, France, 01/01/1999
Source-ID: 173530
Publication: Research - peer-review › Article in proceedings – Annual report year: 1999


General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling, AT&T, University of Maryland, Delft University of Technology, KTH - Royal Institute of Technology
Authors: Ostermann, J. (Ekstern), Liu, K. R. (Ekstern), Sørensen, J. A. (Intern), Deprettere, E. (Ekstern), Kleijn, B. (Ekstern)
Number of pages: 650
Publication date: 1999

Publication information
Place of publication: Piscataway
Publisher: IEEE
Original language: English
Main Research Area: Technical/natural sciences
Source-ID: 172663
Publication: Research - peer-review › Book – Annual report year: 1999
Virtual Seminar Room
The initial design considerations and research goals for an ATM network based virtual seminar room with 5 sites are presented.

General information
State: Published
Organisations: Department of Photonics Engineering, Department of Informatics and Mathematical Modeling, Department of Telecommunication, Department of Information Technology
Pages: 581-586
Publication date: 1999

Host publication information
Title of host publication: Proceedings of the IEEE 3rd Multimedia Signal Processing
Publisher: IEEE
ISBN (Print): 0-7803-5610-1
Main Research Area: Technical/natural sciences
Conference: IEEE Workshop Multimedia Signal Processing, Helsingør, 01/01/1999
Source: orbit
Source-ID: 175162
Publication: Research - peer-review › Article in proceedings – Annual report year: 1999

Virtual seminar room-modelling and experimentation in horizontal and vertical integration
The initial design considerations and research goals for an ATM network based virtual seminar room with five sites are presented. The basic observation behind the design of the virtual seminar room is, that besides the constant growth in available bandwidth for transmission in communication networks, many networks either already offer or are developing technologies to give quality of service (QoS) guarantees. This means that applications not only will support transmission of coded audio and video, but can be designed in a known and well-controlled network environment, which enables the applications to provide, in a broad sense, a high and reliable quality presented at the human computer interface.

General information
State: Published
Organisations: Coding and Visual Communication, Department of Photonics Engineering, Department of Informatics and Mathematical Modeling, Department of Telecommunication, Computer Science and Engineering
Publication date: 1999

Host publication information
Title of host publication: IEEE 3rd Workshop on Multimedia Signal Processing, 1999
Publisher: IEEE
ISBN (Print): 0-7803-5610-1
Main Research Area: Technical/natural sciences
Conference: IEEE 3rd Workshop on Multimedia Signal Processing, 01/01/1999
Electronic versions:
Forchhammer.pdf
DOIs:
10.1109/MMSP.1999.793918

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Source: orbit
Source-ID: 266784
Publication: Research - peer-review › Article in proceedings – Annual report year: 1999

Signal subspace methods for speech enhancement

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling
Feature Extraction Method for High Impedance Ground Fault Localization in Radial Power Distribution Networks

A new approach to the localization of high impedance ground faults in compensated radial power distribution networks is presented. The total size of such networks is often very large and a major part of the monitoring of these is carried out manually. The increasing complexity of industrial processes and communication systems lead to demands for improved monitoring of power distribution networks so that the quality of power delivery can be kept at a controlled level. The ground fault localization method for each feeder in a network is based on the centralized frequency broadband measurement of three phase voltages and currents. The method consists of a feature extractor, based on a grid description of the feeder by impulse responses, and a neural network for ground fault localization. The emphasis of this paper is the feature extractor, and the detection of the time instance of a ground fault.
Problems, Lecture Note for Course 04362, Digital Signal Processing, IMM, DTU

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling
Authors: Larsen, J. (Intern), Sørensen, J. A. (Intern)
Number of pages: 33
Publication date: 1998

Publication information
Original language: English
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 170416
Publication: Research - peer-review › Book – Annual report year: 1998

Problem Solutions, Lecture Note for Course 04362, Digital Signal Processing, IMM, DTU

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling
Authors: Larsen, J. (Intern), Sørensen, J. A. (Intern)
Number of pages: 58
Publication date: 1998

Publication information
Original language: English
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 170418
Publication: Research - peer-review › Book – Annual report year: 1998

A Concept for Monitoring Radial Distribution networks Based on Very Few Measurements.

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling, NESA A/S
Authors: Munk, S. M. (Ekstern), Sørensen, J. A. (Intern)
Pages: 227-230
Publication date: 1997

Host publication information
Title of host publication: Proc. 4th International Workshop on Systems, Signals and Image Processing
Place of publication: Poznan
Publisher: Polish Society of Theoretical and Applied Electrical Engineering
Main Research Area: Technical/natural sciences
Conference: 4th International Workshop on Systems, Signals and Image Processing, Poznan, 01/01/1997
Source: orbit
Source-ID: 168645
Publication: Research - peer-review › Book chapter – Annual report year: 1997

An EMG Decomposition System Aimed at Detailed Analysis of Motor Unit Activity.

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling, Copenhagen University Hospital
Authors: Nikolic, M. (Ekstern), Krarup, C. (Ekstern), Dahl, K. (Ekstern), Sørensen, J. A. (Intern)
Pages: 220-220
Detailed Analysis of Motor Unit Activity.

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling, Copenhagen University Hospital
Authors: Nikolic, M. (Ekstern), Sørensen, J. A. (Intern), Dahl, K. (Ekstern), Krarup, C. (Ekstern)
Pages: 1257-1260
Publication date: 1997

Host publication information
Place of publication: Chicago
Publisher: IEEE
Main Research Area: Technical/natural sciences
Conference: Nineteenth Annual International Conference of the IEEE Engineering in Medicine and Biology Society., Chicago, 01/01/1997
Source: orbit
Source-ID: 168640
Publication: Research - peer-review › Article in proceedings – Annual report year: 1997

Detection of Variability of the Motor Unit Action Potential Shape by Means of the Firing Patterns

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling, Copenhagen University Hospital
Authors: Krarup, C. (Ekstern), Nikolic, M. (Ekstern), Dahl, K. (Ekstern), Sørensen, J. A. (Intern)
Pages: 100-100
Publication date: 1997

Publication information
Volume: 103
Original language: English
Source: orbit
Source-ID: 168642
Publication: Research - peer-review › Journal article – Annual report year: 1997

Modeling and Evaluation of Multimodal Perceptual Quality
The increasing performance requirements of multimedia modalities, carrying speech, audio, video, image, and graphics emphasize the need for assessment methods of the total quality of a multimedia system and methods for simultaneous analysis of the system components. It is important to take into account still more perceptual characteristics of the human auditory, visual, tactile systems, as well as combinations of these systems, it is also highly desirable to acquire methods for analysing the main perceptual parameters, which constitute the input for the total quality assessment. A framework is suggested for assessing the quality of modalities and their combinations

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling
Authors: Petersen, K. T. (Intern), Hansen, S. D. (Intern), Sørensen, J. A. (Intern)
Pages: 38-39
Publication date: 1997
Objective Speech Quality Assessment of Compounded Digital Telecommunication Systems

**General information**
- State: Published
- Organisations: Department of Informatics and Mathematical Modeling
- Authors: Petersen, K. T. (Intern), Sørensen, J. A. (Intern), Hansen, S. D. (Intern)
- Publication date: 1997

**Host publication information**
- Title of host publication: IEEE Multimedia Signal Processing
- Publisher: IEEE
- Main Research Area: Technical/natural sciences
- Source: orbit
- Source-ID: 168533
- Publication: Research - peer-review › Article in proceedings – Annual report year: 1997

Speech Quality Assessment of Compounded Digital Telecommunication Systems; Perceptual Dimensions

**General information**
- State: Published
- Organisations: Department of Informatics and Mathematical Modeling
- Authors: Petersen, K. T. (Intern), Hansen, S. D. (Intern), Sørensen, J. A. (Intern)
- Publication date: 1997

**Host publication information**
- Title of host publication: IEEE International Conference on Acoustics Speech and Signal Processing
- Publisher: IEEE
- Main Research Area: Technical/natural sciences
- Source: orbit
- Source-ID: 168532
- Publication: Research - peer-review › Article in proceedings – Annual report year: 1997

ULV-Based Signal Subspace Method for Speech Enhancement

**General information**
- State: Published
- Organisations: Department of Informatics and Mathematical Modeling, Scientific Computing
- Authors: Hansen, P. S. K. (Intern), Hansen, P. C. (Intern), Hansen, S. D. (Intern), Sørensen, J. A. (Intern)
- Pages: 9-12
- Publication date: 1997

**Host publication information**
- Title of host publication: International Workshop on Acoustic Echo and Noise Control, IWAENC'97
- Place of publication: London
- Publisher: Imperial Collega
- Main Research Area: Technical/natural sciences
- Conference: International Workshop on Acoustic Echo and Noise Control, 01/01/1997
- Source: orbit
- Source-ID: 200454
- Publication: Research › Article in proceedings – Annual report year: 1997

The Radon Transform - Theory and Implementation

**General information**
- State: Published
- Organisations: Department of Informatics and Mathematical Modeling
- Authors: Toft, P. A. (Intern), Sørensen, J. A. (Intern)
- Number of pages: 326
- Publication date: Nov 1996

**Publication information**
- Place of publication: Kgs. Lyngby, Denmark
Adaptive FIR Filters

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling
Authors: Sørensen, J. A. (Intern)
Number of pages: 46
Publication date: 1996

Publication information
Original language: English
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 276285
Publication: Research › Ph.D. thesis – Annual report year: 1996

Noise Reduction of Speech Signals using the Rank-Revealing ULLV Decomposition

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling, Scientific Computing
Authors: Hansen, P. S. K. (Intern), Hansen, P. C. (Intern), Hansen, S. D. (Intern), Sørensen, J. A. (Intern), Carrato, S. (ed.) (Ekstern)
Pages: 967-970
Publication date: 1996

Host publication information
Title of host publication: Signal Processing VIII. Theories and Applications, EUSIPCO-96
Editors: Ramponi, G., Sicuranza, G. L., Carrato, S., Marsi, S.
Main Research Area: Technical/natural sciences
Conference: Signal Processing VIII. Theories and Applications, EUSIPCO-96, 01/01/1996
Source: orbit
Source-ID: 200455
Publication: Research - peer-review › Book – Annual report year: 1996

Time-area efficient multiplier-free recursive filter architectures for FPGA implementation
Simultaneous design of multiplier-free recursive filters (IIR filters) and their hardware implementation in Xilinx field programmable gate array (XC4000) is presented. The hardware design methodology leads to high performance recursive filters with sampling frequencies in the interval 15-21 MHz (17 bits internal data representation). It is demonstrated that the time-area efficiency and performance of the architectures are considerably above any known approach

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling
Authors: Shajaan, M. (Intern), Sørensen, J. A. (Intern)
Pages: 3268-3271
Publication date: 1996

Host publication information
Title of host publication: Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing
Volume: Volume 6
Publisher: IEEE
ISBN (Print): 07-80-33192-3
Main Research Area: Technical/natural sciences
Conference: 1996 IEEE International Conference on Acoustics, Speech and Signal Processing, Atlanta, GA, United States, 07/05/1996 - 07/05/1996
A time signal prediction algorithm based on relative neighborhood graph (RNG) localized FIR filters is defined. The RNG connects two nodes, of input space dimension D, if their lune does not contain any other node. The FIR filters associated with the nodes, are used for local approximation of the training vectors belonging to the lunes formed by the nodes. The predictor training is carried out by iteration through 3 stages: initialization of the RNG of the training signal by vector quantization, LS estimation of the FIR filters localized in the input space by RNG nodes and adaptation of the RNG nodes by equalizing the LS approximation error among the lunes formed by the nodes of the RNG. The training properties of the predictor is exemplified on a burst signal and characterized by the normalized mean square error (NMSE) and the mean valence of the RNG nodes through the adaptation.
Time-area efficient multiplier-free filter architectures for FPGA implementation

Simultaneous design of multiplier-free filters and their hardware implementation in Xilinx field programmable gate array (XC4000) is presented. The filter synthesis method is a new approach based on cascade coupling of low order sections. The complexity of the design algorithm is $\mathcal{O}(\text{filter order})$. The hardware design methodology leads to high performance filters with sampling frequencies in the interval 20-50 MHz. Time-area efficiency and performance of the architectures are considerably above any known approach.
Time signal filtering by relative neighborhood graph localized linear approximation

A time signal filtering algorithm based on the relative neighborhood graph (RNG) used for localization of linear filters is proposed. The filter is constructed from a training signal during two stages. During the first stage an RNG is constructed. During the second stage, localized linear filters are associated each RNG node and adapted to the training signal. The filtering of a test signal is then carried out by inserting the test signal vectors in the RNG followed by the determination of the filter output as a function of the linear filters or the RNG nodes to which the vectors are associated. Training examples are given on a segment of a speech signal and a signal with burst structure generated from a bilinear Subba Rao model.
A family of quantization-based piecewise linear filter networks

A family of quantization-based piecewise linear filter networks is proposed. For stationary signals, a filter network from this family is a generalization of the classical Wiener filter with an input signal and a desired response. The construction of the filter network is based on quantization of the input signal $x(n)$ into quantization classes. With each quantization class is associated a linear filter. The filtering at time $n$ is carried out by the filter belonging to the actual quantization class of $x(n)$ and the filters belonging to the neighbor quantization classes of $x(n)$ (regularization). This construction leads to a three-layer filter network. The first layer consists of the quantization class filters for the input signal. The second layer carries out the regularization between neighbor quantization classes, and the third layer constitutes a decision of quantization class from where the resulting output is obtained.
A circular finite-element model reconstruction in electrical impedance tomography

A circular finite-element model utilizing triangular picture elements is constructed using a previously published reconstruction method. The model is applied to examples of simulated reconstructed pictures to illustrate its properties with regard to sensitivity, contrast and shape of the object.
Development of Smart Sensor for flow & gas concentration measurement

Center for Bachelor of Engineering Studies
Afdelingen for Informatik
Department of Chemistry
NanoChemistry
Afdelingen for El-teknologi
Donghua University
Period: 01/09/2015 → 31/12/2017
Number of participants: 6
Acronym: SmartSensorFlow
Project ID: 97254
Contact person:
Andersen, Flemming Højskov (Intern)
Project participant:
Hou, Chengyi (Intern)
Sørensen, John Aasted (Intern)
Andersen, Birger (Intern)
Maack, Lars (Intern)
Project Manager, organisational:
Blaszczczyk, Tomasz (Intern)

Crop, Livestock and Forests Integrated System for Intelligent Automation, Processing and Control
The Clafis project, with a duration of 36 months and a funding of 3.6 M€ contains 13 beneficiaries with a high focus on research. It intends to develop an open source intelligent Agriculture Management Information System. From the hardware side it contains a cloud based ioGateways (based on OPC UA) and a bus system, enabling to connect all kind of devises and systems, including Internet of Things (IoT) and an sophisticated HMI (Human Machine Interface). The software enables the connectivity and integration of most used platforms, secure data handling, Knowledge Management and middleware integration.

Center for Bachelor of Engineering Studies
Afdelingen for Informatik
Period: 01/11/2013 → 01/11/2016
Number of participants: 4
Agriculture automation, Wireless communication, Internet of Things, Data security and trust, Data fusion
Acronym: CLAFIS
Project ID: 97134
Number of related Ph.D. students: 1
Project participant:
Kaur, Bipjeet (Intern)
Blaszczczyk, Tomasz (Intern)
Supervisor:
Sørensen, John Aasted (Intern)
Project Coordinator:
Andersen, Birger (Intern)

Related projects:
Crop & Livestock Intelligent Integrated Solution for Monitoring, Control and Marketability of Agribusiness Data and Resources
Publications:
Dynamic AES – Extending the Lifetime?
CCM-R: Secure Counter Synchronization for IoT Wireless Link
Comparative study of Internet of Things infrastructure and security
An Energy-Efficient Link with Adaptive Transmit Power Control for Long Range Networks
Heuritic Trust in IoT
Attacks and countermeasures on AES and ECC
Remote Agriculture Automation using Wireless Link and IoT Gateway Infrastructure
An Energy Efficient Adaptive Wireless Link for Farms based on IoT technologies
Inverse Problems and Data Fusion for crop production applications targeting optimal growth - Fertilization

Pædagogisk projekt indenfor sundhedsteknologi.
Center for Bachelor of Engineering Studies
Center for Information Technology and Electronics
Department of Electrical Engineering

Pædagogisk projekt indenfor sundhedsteknologi.
Center for Continuing Education

Styrkelse af samarbejdet mellem ingeniørhøjskoler (IHA og IHK) og virksomheder.
Center for Bachelor of Engineering Studies
Center for Information Technology and Electronics
Department of Electrical Engineering

Lebender med ingeniørhøjskolerne (IHA og IHK) og virksomheder.

Diplomingeniøruddannelse i Sundhedsteknologi
Diplomingeniøruddannelse i Sundhedsteknologi.

Diplomingeniøruddannelse i Sundhedsteknologi
Diplomingeniøruddannelse i Sundhedsteknologi.

Diplomingeniøruddannelse i Sundhedsteknologi
Diplomingeniøruddannelse i Sundhedsteknologi.

Diplomingeniøruddannelse i Sundhedsteknologi
Diplomingeniøruddannelse i Sundhedsteknologi.

Summary:

Project Description:

- Heuritic Trust in IoT
- Attacks and countermeasures on AES and ECC
- Remote Agriculture Automation using Wireless Link and IoT Gateway Infrastructure
- An Energy Efficient Adaptive Wireless Link for Farms based on IoT technologies
- Inverse Problems and Data Fusion for crop production applications targeting optimal growth - Fertilization

Participants:

Center for Bachelor of Engineering Studies
Center for Information Technology and Electronics
Department of Electrical Engineering

Project Participant:

Sørensen, John Aasted (Intern)
Baden-Kristensen, Keld (Intern)
Munck-Fairwood, Roger (Intern)
Jørgensen, Ian (Ekstern)

Financing sources:

Source: Internal funding (public)
Name of research programme: Dansk Center for Ingeniøruddannelse
Amount: 60,000.00 Danish Kroner

Project

Styrkelse af samarbejdet mellem ingeniørhøjskoler (IHA og IHK) og virksomheder.

Center for Bachelor of Engineering Studies
Center for Information Technology and Electronics
Department of Electrical Engineering

Project Participant:

Sørensen, John Aasted (Intern)
Besenbacher, Bente (Ekstern)

Financing sources:

Source: Unknown
Name of research programme: Undervisningsministeriet
Amount: 300,000.00 Danish Kroner

Project

Diplomingeniøruddannelse i Sundhedsteknologi
Diplomingeniøruddannelse i Sundhedsteknologi.

Relations:

Activities: Sundhedsteknologi - metoder, praksis og perspektiver

Center for Bachelor of Engineering Studies
Center for Information Technology and Electronics
Department of Electrical Engineering
Department of Applied Mathematics and Computer Science
Center for Continuing Education
Achieving Channel QoS and Security with a Software Defined Radio
An increasing number of applications require a specific level of QoS on the communication channel and at the same time the fulfillment of some security demands. An example is VoIP that might require at least 100 kbps bandwidth, at most 200 msec delay, and encryption (and/or hiding) of the package stream. Furthermore for example at most 10% of data/packages can be allowed lost or vanished due to noise or DoS attack. In our project we are working on a software defined radio platform (GNU radio) for the reason that we want to look into how the flexibility of a software defined radio can help us in achieving specific QoS and security demands needed by typical applications. The setup is simple and consists of two computing devices connected to software defined radios. The devices are running applications that require package streams over the air. A third computing device connected to a third software defined radio is the adversary that can carry out any kind of attacks – especially it can carry out DoS attacks by generating noise.
Name of research programme: Forsknings- og Innovationsstyrelsen
Amount: 1,485,000.00 Danish Kroner
Source: Internal funding (public)
Name of research programme: Ingeniørhøjskolen i København
Amount: 565,000.00 Danish Kroner

Relations
Publications:
Denial of Service Prevention for SDR
Denial of Service Prevention for 5G

1-bit audio encoding schemes for digital amplification of audio signals
Department of Informatics and Mathematical Modeling
Period: 01/04/2000 → 01/04/2001
Number of participants: 2
Phd Student:
Hansen, Thomas Karsten (Intern)
Main Supervisor:
Sørensen, John Aasted (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Erhvervsforskerordningen
Project: PhD

IEEE International Workshop on Multimedia Signal Processing, 1999
Project No. 1279. Responsible for the accomplishment of the paper submission, technical program, invited speakers, and conference site. The Workshop is sponsored by Nokia A/S, Teledanmark A/S, Thriges Fond, The Danish National Center for IT Research, and IMM DTU. The workshop was carried out in the period Monday September 13 - 15. The homepage of the workshop is http://eivind.imm.dtu.dk/mmsp99/. At IMM the work was carried out in cooperation with Ellen Marie Borup, Steffen Duus Hansen, Peter Søren Kirk Hansen, Preben Kidmose, and Ulla Nørhave. The workshop was accomplished in cooperation with IEEE Multimedia Signal Processing Technical Committee.

Department of Informatics and Mathematical Modeling
Period: 13/09/1999 → 15/09/1999
Number of participants: 1
Project Manager, organisational:
Sørensen, John Aasted (Intern)

Ph.D. Project: Multichannel Adaptiv Analysis of Rotating Systems (MARS)
Project No. 3140. The objectives of the project are to develop methods for the estimation and tracking of the fundamental frequency components in rotating systems, without using tachometers, but only accelerometer measurements from different acquisition points on the system being investigated. Furthermore, the multichannel measurements must be used for the estimation of parameters, which can be used for the diagnosis of unbalance, misalignment, bent shaft and instability in journal bearings and mechanical looseness, and incipient faults in rolling-element bearings. Projects participants: civilingenior Thorkild Find Pedersen, Bruel & Kjaer A/S, ph.d. studnet. Supervisors: civilingenior Henrik Herlufsen, Bruel & Kjaer A/S, civilingenior Ole Roth, Bruel & Kjaer A/S, civilingenior, ph.d. Klaus Gram-Hansen, Gram & Juhl ApS, Professor Per Chr. Hansen, IMM, DTU, lektor Steffen Duus Hansen, IMM, DTU, lektor John Aa. Sorensen, IMM, IMM, DTU.

Department of Informatics and Mathematical Modeling
Period: 01/09/1999 → 31/08/2001
Number of participants: 1
Project Manager, organisational:
Sørensen, John Aasted (Intern)

Financing sources
Source: Unknown
Name of research programme: Ukendt
Amount: 1,466,950.00 Danish Kroner
Signal and Image Processing for Telemedicine (SITE).
Project No. 3135. The rapid development in sensor technology, signal processing methods and parallel computing technology has enabled the physical realization of complex mathematical models in a diversity of scientific and industrial areas. This beginning interdisciplinary convergence of methodologies in science and technology has already had an impact on several industries and is emerging in medical imaging and more generally in telemedicine. It seems very likely that bringing together specialists from the mentioned areas could further boost the development of medical information processing in Denmark. Such considerations also head to incorporating the disciplines signal processing, scientific computing, and image analysis in the Department of Mathematical Modelling (IMM) together with applied mathematical physics, numerical analysis, operations research, and statistics. Furthermore, there has been established a close cooperation between scientist from DTU and several departments from different hospitals and university clinics.

Department of Informatics and Mathematical Modeling
Period: 01/07/1999 → 30/06/2003
Number of participants: 9
Project participant:
Madsen, Kaj (Intern)
Hansen, Per Christian (Intern)
Hansen, Lars Kai (Intern)
Ersbøll, Bjarne Kjær (Intern)
Carstensen, Jens Michael (Intern)
Larsen, Jan (Intern)
Sørensen, John Aasted (Intern)
Sigurdsson, Sigurdur (Intern)
Project Manager, organisational:
Conradsen, Knut (Intern)

Ph.D. project: Multichannel Systems for Combined Adaptive Noise Reduction and Signal Separation
The research goal is the development of noise reduction/signal separation methods, based on a combination of spatial localization, subspace filtering and application of model information on the signals being noise reduced or separated. In particular there is aimed for noise reduction, spatial localization and separation of speech signals and a selection of impulse noise and broad band noise sources.

Department of Informatics and Mathematical Modeling
Virtual Seminar Room; Audio
Project No. 1255. The aim of the project is the development of a robust speech acquisition system for a Virtual Seminar Room application. The work has been concentrated on the establishment of a multimicrophone, amplifier, signal processor, and loudspeaker system, which allows for research in algorithms for speech localization, noise reduction and signal separation. There has been work on robust adaptive beamforming, where an initial combined beamforming and room simulation model, has been developed in Matlab. Furthermore there has been work on acoustic echo cancellation. This project is a part of a cooperation on the design of a Virtual Seminar Room, and is concentrated on the audio part. The project is carried out in cooperation with the DTU Departments COM, IT and TELE, and in cooperation with the Department of Information and Media Science at Aarhus University.

Department of Informatics and Mathematical Modeling
Department of Photonics Engineering
Department of Information Technology

Analysis of Electromyographic Signals
The object of this project is the analysis of motor unit potentials measured by needle electrodes in muscles. The application area is clinical diagnosis of muscle- and nerve diseases. Emphasis is concentrated on analyzing the sequence of potentials and particular variations in the potentials forms. These variations, also denoted variability, are expected to form diagnostic parameters for the clinical diagnosis of muscle- and nerve diseases. Furthermore they are expected to form a basis for the analysis of the restitution process of nerve- and muscle lesions. A database consisting of measurements on normal persons and patients with a selection of muscle and nerve diseases has been established. Among others the database contains a selection of measurements which is expected to originate in the variability phenomenon. The analysis system is being used for clinical diagnosis at the Department of Neurophysiology, The Royal Hospital. In the period of reporting, the work has concentrated on the elaboration of the ph.d. thesis.
Department of Informatics and Mathematical Modeling
Royal Hospital
Panum Institute
Kristian Dahl
Period: 01/06/1996 → 20/04/1999
Number of participants: 4
Project participant:
Hansen, Steffen Duus (Intern)
Krarup, Chr. (Ekstern)
Nikolic, Mile (Ekstern)
Project Manager, organisational:
Sørensen, John Aasted (Intern)
Project

**Mobils system til tilstandsvurdeirmg af AC-højspændingskabler**

Department of Electrical Engineering
Period: 01/05/1996 → …
Number of participants: 3
Phd Student:
Villefrance, Rasmus (Intern)
Main Supervisor:
Henriksen, Mogens (Intern)
Examiner:
Sørensen, John Aasted (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Erhvervsforskerordningen
Project: PhD

**Signalbehandling anvendt til overvågning af distributionsnet**

Department of Informatics and Mathematical Modeling
Period: 01/05/1996 → …
Number of participants: 6
Phd Student:
Jensen, Kåre Jean (Intern)
Supervisor:
Munk, Steen M. (Intern)
Main Supervisor:
Sørensen, John Aasted (Intern)
Examiner:
Jørgensen, Preben (Ekstern)
Koldby, Erik (Intern)
Wilhjelm, Jens E. (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Erhvervsforskerordningen
Project: PhD

**Signalbehandling anvendt til overvågning af distributionsnet**

Department of Informatics and Mathematical Modeling
Period: 01/12/1995 → 01/03/1996
Number of participants: 4
Phd Student:
Thomsen, Henrik (Intern)
Højeffektive effektforstærkere
Department of Electrical Engineering
Number of participants: 3
PhD Student: Nielsen, Karsten (Intern)
Supervisor: Sørensen, John Aasted (Intern)
Main Supervisor: Andersen, Michael A. E. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Erhvervsforskerordningen
Project: PhD

Condition Monitoring And Fault Diagnosis In Marine Diesel Engines
Department of Informatics and Mathematical Modeling
Period: 01/12/1994 → …
Number of participants: 5
PhD Student: Fog, Torben L. (Intern)
Supervisor: Hansen, Lars Kai (Intern)
Pedersen, Peter Sunn (Ekstern)
Main Supervisor: Sørensen, John Aasted (Intern)
Examiner: Sørensen, Helge Bjarup Dissing (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Erhvervsforskerordningen
Project: PhD

Ph.D. Project: Prediction of the Cylinder Condition in Marine Engines Using Neural Networks
Marine engine monitoring is an active research area with a long history. Successful monitoring is vital for marine traffic safety and significant economic factors can be involved e.g., in the form of transport delay costs and additional use of spare parts. At present, only quite simple electronic methods exists for monitoring the cylinder condition in marine engines. Certain mechanical systems have been constructed, although robust, they do not provide adequate information about the specific fault conditions. Development of new and better methods for signal analysis in fault diagnosing is therefore of great interest. The goal of the project is to develop a detailed and reliable system for monitoring the cylinder condition in marine engines. The cylinder condition will be monitored by use of sensors which either directly or indirectly can measure important parameters of the cylinder condition (temperature, cylinder pressure and sound/vibrations). This demands integration of information from sources with different signal characteristics and signal-to-noise ratios in a comprehensive evaluation of the cylinder condition (signal/sensor fusion). Also, design of performance criteria by use of for instance Bayesian analysis and integration of specific expert knowledge (prior information) will be considered. One specific form of prior information is the so-called wavelet representation for sound/vibration signals. In this case the network input could be represented as sound/vibration “images” describing time dependent development of the signal's frequency spectrum. Such representation can be useful for detection of anomalies and non-stationarity. The diagnosing tool will be a neural
network and therefore a detailed study of neural network architectures and performance optimization methods will be necessary. Especially methods for analyzing multivariate time series (simultaneous prediction of several parameters) will be in focus.

Department of Informatics and Mathematical Modeling

MAN B&W Diesel A/S

University of Copenhagen
Period: 01/12/1994 → 31/05/1998
Number of participants: 5
Project participant:
Hansen, Lars Kai (Intern)
Fog, Torben L. (Intern)
Peteren, Peter Sunn (Ekstern)
Lautrup, Benny (Ekstern)
Project Manager, organisational:
Sørensen, John Aasted (Intern)

Financing sources
Source: Unknown
Name of research programme: Ukendt
Amount: 600,000.00 Danish Kroner

Talekodning ved digital signalbehandling og lydkvalitet i sammensatte digitale transmissionssystemer

Department of Informatics and Mathematical Modeling
Period: 01/10/1994 → ...
Number of participants: 4
Phd Student:
Petersen, Kim T (Intern)
Supervisor:
Sørensen, John Aasted (Intern)
Main Supervisor:
Hansen, Steffen Duus (Intern)
Examiner:
Elberling, Claus (Ekstern)

Financing sources
Source: Internal funding (public)
Name of research programme: Erhvervsforskerordningen
Project: PhD

Støjreduktion af talesignaler i mobiltelefoni ved anvendelse af flere mikrofoner og singulær værdi dekomposition

Department of Informatics and Mathematical Modeling
Period: 01/02/1994 → 29/07/1998
Number of participants: 4
Phd Student:
Hansen, Peter Søren Kirk (Intern)
Supervisor:
Sørensen, John Aasted (Intern)
Main Supervisor:
Hansen, Steffen Duus (Intern)
Examiner:
Forchhammer, Søren (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: DTU-Su Stipendium, Eksperiment
Project: PhD
Analyse af tids-frekvens-fordelinger v.h.a. den diskrete Radontransformation

Department of Informatics and Mathematical Modeling
Period: 01/03/1993 → 27/11/1996
Number of participants: 5
Phd Student:
Toft, Peter Aundal (Intern)
Supervisor:
Møller, Peter Koefoed (Ekstern)
Main Supervisor:
Sørensen, John Aasted (Intern)
Examiner:
Forchhammer, Søren (Intern)
Granum, Erik (Ekstern)

Financing sources
Source: Internal funding (public)
Name of research programme: DTU-Su Stipendium, Eksperiment
Project: PhD

Multiplikatorfrie, digitale filterstrukturer

Department of Informatics and Mathematical Modeling
Period: 01/02/1993 → 03/09/1996
Number of participants: 4
Phd Student:
Shajaan, Mohammad (Intern)
Supervisor:
Møller, Peter Koefoed (Ekstern)
Main Supervisor:
Sørensen, John Aasted (Intern)
Examiner:
Sørensen, Helge Bjarup Dissing (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: DTU-Su Stipendium, Eksperiment
Project: PhD

signalbehandling anvendt til overvågning af distributionsnet

Department of Informatics and Mathematical Modeling
Period: 01/12/1992 → …
Number of participants: 4
Phd Student:
Munk, Steen M. (Intern)
Supervisor:
Pedersen, Knud Ole Helgesen (Intern)
Main Supervisor:
Sørensen, John Aasted (Intern)
Examiner:
Laubst, Torben (Ekstern)

Financing sources
Source: Internal funding (public)
Name of research programme: ATV- Gammel ordning
Project: PhD

1-bit kodning af audiosignaler.
Department of Informatics and Mathematical Modeling  
Period: 01/02/1992 → 01/03/1995  
Number of participants: 3  
Phd Student:  
Risbo, Lars (Intern)  
Supervisor:  
Møller, Peter Koefoed (Ekstern)  
Main Supervisor:  
Sørensen, John Aasted (Intern)  

Financing sources  
Source: Internal funding (public)  
Name of research programme: DTU-stipendium  
Project: PhD

Syntetisering af støj i seismiske signaler under udnyttelse af priori viden om undergrunden og den seismiske registrer

Administration  
Period: 01/07/1991 → 09/01/1995  
Number of participants: 3  
Phd Student:  
Hansen, Kim Vejlby (Intern)  
Supervisor:  
Sørensen, John Aasted (Intern)  
Main Supervisor:  
Møller, Peter Koefoed (Ekstern)  

Financing sources  
Source: Internal funding (public)  
Name of research programme: ATV- Gammel ordning  
Project: PhD

Adaptive filtre til undertrykkelse af akustisk ekko i mobiltelefoner

Department of Informatics and Mathematical Modeling  
Period: 01/09/1990 → 06/09/1995  
Number of participants: 2  
Phd Student:  
Jensen, Søren Holdt (Intern)  
Main Supervisor:  
Sørensen, John Aasted (Intern)  

Financing sources  
Source: Internal funding (public)  
Name of research programme: Gammel ordning u/skema-SU  
Project: PhD

Design of neural network filters

Department of Informatics and Mathematical Modeling  
Period: 01/02/1990 → …  
Number of participants: 2  
Phd Student:  
Larsen, Jan (Intern)  
Main Supervisor:  
Sørensen, John Aasted (Intern)  

Financing sources  
Source: Internal funding (public)  
Name of research programme: Gammel ordning u/skema-SU  
Project: PhD
Activities:

**IEEE Denmark (External organisation)**
Period: 2011 → 2012
John Aasted Sørensen (Participant)
Center for Bachelor of Engineering Studies

Description
Medlem af bestyrelsen for IEEE Denmark Section.
Links:
http://www.ieee.dk

**Related external organisation**
IEEE Denmark

**Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar**

**7th International Conference on Electrical and Electronics Engineering**
Period: 1 Dec 2011 → 4 Dec 2011
John Aasted Sørensen (Participant)
Center for Bachelor of Engineering Studies

Description
ELECO’11, Bursa, Turkey

Medlem af ”Technical Program Committee” ELECO’11: The 7th International Conference on Electrical and Electronics Engineering.

**Related event**

**7th International Conference on Electrical and Electronics Engineering**
01/12/2011 → 04/12/2011
Bursa, Turkey
Activity: Attending an event › Participating in or organising a conference

**Sundhedssteknologi - metoder, praksis og perspektiver**
Period: 18 Nov 2010
John Aasted Sørensen (Organizer)
Center for Bachelor of Engineering Studies

Description
Arrangør
Documents:
Program
Introduktion
Fakta og visioner for det danske sundhedsdsystem
Klinisk besøg og/eller telemedicin.
Telemedicin - status og perspektiver.
Patientkufferten - perspektiver
Videncenter Sundhedssteknologi i hjemmet
Udviklingsperspektiver indenfor ældreområdet
Fordele og ulemper ved digitalisering og telemedicin - med hospitalslægens briller på.
Application and Perspectives for Localization in HealthCare IT Systems
Diplomingeniør i sundhedssteknologi

**Related event**
Ingeniøruddannelsernes landsdækkende censorkorps.
Period: 1 Apr 2010 → 31 Mar 2014
John Aasted Sørensen (Internal examiner)
Center for Bachelor of Engineering Studies
Description
Signalbehandling, kommunikation, matematik, medicoteknik.
Activity: Examinations and supervision › Internal examination

IEEE Denmark (External organisation)
Period: 2009 → 2010
John Aasted Sørensen (Participant)
Center for Bachelor of Engineering Studies
Description
Medlem af bestyrelsen for IEEE Denmark Section
Body type: IEEE
Links:
http://www.ieee.dk
Related external organisation
IEEE Denmark
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar

Software Defined Radio for Forsvarets Materieltjeneste: Consultancy
Period: 10 Mar 2009 → 18 Jun 2009
John Aasted Sørensen (Consultant)
Center for Bachelor of Engineering Studies
Description
Teaching:
  * Antennas, channels, noise and available standards
  * Digital filters
  * Exam
Kompetenceudvikling hos kunden
Documents:
Course plan
Related external organisation
Forsvarets Materieltjeneste
Denmark
Activity: Public and private sector consultancy › Public sector consultancy

Introduction to digital radio communication based on software defined radio, part II: Consultancy
Period: 9 Dec 2008 → 10 Dec 2008
John Aasted Sørensen (Consultant)
Center for Bachelor of Engineering Studies
Description
Teacher day 2 of course offered by the Wireless Center IHK and TI.
Related event

*Introduction to digital radio communication based on software defined radio, part II*

09/12/2008 → 10/12/2008

Denmark

Activity: Public and private sector consultancy › Consultancy

**CensorNet - Ingeniøruddannelsernes landsdækkende censorkorps.**

(External organisation)

Period: 1 Apr 2006 → 31 Mar 2010

John Aasted Sørensen (Member)

Center for Bachelor of Engineering Studies

**Description**

Ingeniøruddannelsernes landsdækkende censorkorps.

Signalbehandling, kommunikation, matematik, medicoteknik.

**Related external organisation**

CensorNet - Ingeniøruddannelsernes landsdækkende censorkorps.

Denmark

Activity: Membership › Membership of research networks or expert groups