Cognitive Systems - DTU Orbit (06/04/2018)

Cognitive Systems
Department of Applied Mathematics and Computer Science
Organisational unit: Section

Publications:

**A Diagnostic and Predictive Framework for Wind Turbine Drive Train Monitoring**
Publication: Research › Ph.D. thesis – Annual report year: 2018

**Altered auditory processing and effective connectivity in 22q11.2 deletion syndrome**
Publication: Research - peer-review › Journal article – Annual report year: 2018

**Automatic skull segmentation from MR images for realistic volume conductor models of the head: Assessment of the state-of-the-art**
Publication: Research - peer-review › Journal article – Annual report year: 2018

**Benefits of spatio-temporal modelling for short term wind power forecasting at both individual and aggregated levels**
Publication: Research - peer-review › Journal article – Annual report year: 2018

**Deep Generative Models for Molecular Science**
Jørgensen, P. B., Schmidt, M. N. & Winther, O. 2018 In : Molecular Informatics. 37, 1-2, 9 p., 1700133
Publication: Research - peer-review › Journal article – Annual report year: 2018

**Deep Generative Models for Semi-Supervised Machine Learning**
Publication: Research › Ph.D. thesis – Annual report year: 2018

**Deep learning for automated drivetrain fault detection**
Publication: Research - peer-review › Journal article – Annual report year: 2018

**Design process robustness: A bi-partite network analysis reveals the central importance of people**
Piccolo, S., Jørgensen, S. L. & Maier, A. 2018 In : Design Science Journal. 4, e1
Publication: Research - peer-review › Journal article – Annual report year: 2018

**Functional Connectivity using a Wishart Mixture Model**
Publication: Research - peer-review › Article in proceedings – Annual report year: 2018

**Optimizing targeted vaccination across cyber-physical networks: an empirically based mathematical simulation study**
Publication: Research - peer-review › Journal article – Annual report year: 2018

**Predictive assessment of models for dynamic functional connectivity**
**DeepLoc: prediction of protein subcellular localization using deep learning**

**Deep recurrent conditional random field network for protein secondary prediction**

**Difference-of-Convex optimization for variational kl-corrected inference in dirichlet process mixtures**

**EEG Based Inference of Spatio-Temporal Brain Dynamics**

**EEG in the classroom: Synchronised neural recordings during video presentation**

**EEG source imaging assists decoding in a face recognition task**

**Effective connectivity and gamma oscillations in a group at risk of psychosis**

**Electrophysiological evidence for differences between fusion and combination illusions in audiovisual speech perception**

**End-to-end information extraction without token-level supervision**

**Enhancing User Experience in Next Generation Mobile Devices Using Eye Tracking as a Biometric Sensor**

**Evidence of complex contagion of information in social media: An experiment using Twitter bots**
Examination of heterogeneous societies: Identifying subpopulations by contrasting cultures
Publication: Research - peer-review › Journal article – Annual report year: 2016

Excavating the mother lode of human-generated text: A systematic review of research that uses the Wikipedia corpus
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FindZebra - using machine learning to aid diagnosis of rare diseases
Publication: Research › Ph.D. thesis – Annual report year: 2017

Fostering Bilateral Patient-Clinician Engagement in Active Self-Tracking of Subjective Experience
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

From concept to in vivo testing: Microcontainers for oral drug delivery
Publication: Research - peer-review › Journal article – Annual report year: 2017

From Raw Data to Social Systems - Separating the Signal from the Noise In Smartphone Sensor Measurements
Publication: Research › Ph.D. thesis – Annual report year: 2017

Gaussian process based independent analysis for temporal source separation in fMRI
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Gradient distortions in EEG provide motion tracking during simultaneous EEG-fMRI
Laustsen, M., Andersen, M., Madsen, K. H. & Hanson, L. G. 2017
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Improved detection of chemical substances from colorimetric sensor data using probabilistic machine learning
Inferring human intentions from the brain data
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Inferring Person-to-person Proximity Using WiFi Signals
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Mikkelsen, K. B., Kidmose, P. & Hansen, L. K. 2017 In : Frontiers in Human Neuroscience. 11, 9 p., 341
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Scholia, Scientometrics and Wikidata
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SensibleSleep: A Bayesian Model for Learning Sleep Patterns from Smartphone Events


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Sequence Classification Using Third-Order Moments


Sparse Probabilistic Parallel Factor Analysis for the Modeling of PET and Task-fMRI Data


The Bipolar Illness Onset study: research protocol for the BIO cohort study


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Restoring State Connectivity Predicts Levodopa-Induced Dyskinesias in Parkinson's Disease

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Publication: Research - peer-review › Journal article – Annual report year: 2015

Four Data Visualization Heuristics to Facilitate Reflection in Personal Informatics
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Frontal alpha oscillations distinguish leaders from followers: Multivariate decoding of mutually interacting brains
Publication: Research - peer-review › Journal article – Annual report year: 2014

Grassmann Averages for Scalable Robust PCA
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014
Guest Editorial: Machine Learning for Signal Processing
Publication: Research › Editorial – Annual report year: 2014

Imaging based agglutination measurement of magnetic micro-particles on a Lab-on-a-Disc platform
Publication: Research › peer-review › Poster – Annual report year: 2014

Improving spectral resolution of SERS using moving AG nanopillar substrate
Publication: Research › peer-review › Poster – Annual report year: 2014

Improving the robustness of Surface Enhanced Raman Spectroscopy based sensors by Bayesian Non-negative Matrix Factorization
Publication: Research › peer-review › Article in proceedings – Annual report year: 2014

Inferring Human Mobility from Sparse Low Accuracy Mobile Sensing Data
Publication: Research › peer-review › Article in proceedings – Annual report year: 2014

Infinite-degree-corrected stochastic block model
Publication: Research › peer-review › Journal article – Annual report year: 2014

In the twinkling of an eye: synchronization of EEG and eye tracking based on blink signatures
Publication: Research › peer-review › Article in proceedings – Annual report year: 2014

Measuring Large-Scale Social Networks with High Resolution
Publication: Research › peer-review › Journal article – Annual report year: 2014

Metrics and Evaluation Models for Accessible Television
Publication: Research › peer-review › Article in proceedings – Annual report year: 2014

Metrics for Probabilistic Geometries
Publication: Research › peer-review › Article in proceedings – Annual report year: 2014
MicroRNA expression analysis and Multiplex ligation-dependent probe amplification in metastatic and non-metastatic uveal melanoma

Modeling Temporal Structure in Music for Emotion Prediction using Pairwise Comparisons

Model Selection in Data Analysis Competitions

Model Transport: Towards Scalable Transfer Learning on Manifolds

Multivariate decoding of mutually interacting brains reveals complementary neural mechanisms in leaders and followers
Konvalinka, I. 2014

Non-linear calibration models for near infrared spectroscopy

Non-negative Tensor Factorization with missing data for the modeling of gene expressions in the Human Brain

Nonparametric Bayesian Clustering of Structural Whole Brain Connectivity in Full Image Resolution

Non-parametric Bayesian graph models reveal community structure in resting state fMRI

Nonparametric statistical structuring of knowledge systems using binary feature matches

On the number of spanning trees in random regular graphs
På dynamikken fik han skik - og Abelprisen til Sinai gik
Publication: Research › Journal article – Annual report year: 2014

Probabilistic shortest path tractography in DTI using Gaussian Process ODE solvers
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Ranking Entities in Networks via Lefschetz Duality
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

S-AMP: Approximate Message Passing for General Matrix Ensembles
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Semi-supervised eigenvectors for large-scale locally-biased learning
Publication: Research - peer-review › Journal article – Annual report year: 2015

Smartphones as pocketable labs: Visions for mobile brain imaging and neurofeedback
Publication: Research - peer-review › Journal article – Annual report year: 2013

Supplementary Notes for Graph Theory 1: Including solutions for selected weekly exercises
Publication: Research - peer-review › Book – Annual report year: 2014

The Fire-Walker’s High: Affect and Physiological Responses in an Extreme Collective Ritual
Publication: Research - peer-review › Journal article – Annual report year: 2014

The impact of hazardous industrial facilities on housing prices: A comparison of parametric and semiparametric hedonic price models
Publication: Research - peer-review › Journal article – Annual report year: 2014

The Long Tail Issue in Large Scale Deployment of Personal Informatics
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

The role of simulation in designing for universal access
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014
A Mobile Personal Informatics System with Interactive Visualizations of Mobility and Social Interactions
Publication: Research - peer-review › Article in proceedings – Annual report year: 2013

Analysis of Conceptualization Patterns across Groups of People
Publication: Research - peer-review › Article in proceedings – Annual report year: 2013

Analysis of Subjective Conceptualizations Towards Collective Conceptual Modelling
Publication: Research - peer-review › Article in proceedings – Annual report year: 2013

A Neural Marker of Perceptual Consciousness in Infants
Publication: Research - peer-review › Journal article – Annual report year: 2013

Archetypal analysis of diverse Pseudomonas aeruginosa transcriptomes reveals adaptation in cystic fibrosis airways
Publication: Research - peer-review › Journal article – Annual report year: 2013

Assessing Miniaturized Sensor Performance using Supervised Learning, with Application to Drug and Explosive Detection
Publication: Research › Ph.D. thesis – Annual report year: 2013

Autobiographical Memory in a Fire-Walking Ritual
Publication: Research - peer-review › Journal article – Annual report year: 2014

Believing versus interacting: Behavioural and neural mechanisms underlying interpersonal coordination
Konvalinka, I., Bauer, M., Kilner, J., Roepstorff, A. & Frith, C. D. 2013
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2014

Bounded Gaussian process regression
Publication: Research › Ph.D. thesis – Annual report year: 2013

Comparing Structural Brain Connectivity by the Infinite Relational Model
Publication: Research - peer-review › Article in proceedings – Annual report year: 2013

Complementary coordination strategies in a joint Fitts’ reciprocal aiming task
Konvalinka, I., Skews, L., Michael, J. & Skews, J. C. 2013
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2014

Crowds, Bluetooth and Rock’n’Roll: Understanding Music Festival Participant Behavior
Publication: Research - peer-review › Article in proceedings – Annual report year: 2013
Nanomechanical recognition of prognostic biomarker suPAR with DVD-ROM optical technology

Nonparametric Bayesian Modeling of Complex Networks: An Introduction

Participatory Bluetooth Sensing: A Method for Acquiring Spatio-Temporal Data about Participant Mobility and Interactions at Large Scale Events

Personal Informatics in the Wild: Hacking Habits for Health & Happiness

Personalized Audio Systems - a Bayesian Approach

Pointing to oneself: active versus passive proprioception revisited and implications for internal models of motor system function

Population Structure

PorkCAD: Case study of the design of a pork product prototyper

Predictive Modeling of Expressed Emotions in Music Using Pairwise Comparisons
Madsen, J., Jensen, B. S. & Larsen, J. 2013 In : Lecture Notes in Computer Science. 7900, p. 253-277

Process optimization of ultrasonic spray coating of polymer films

QS Spiral: Visualizing Periodic Quantified Self Data
Sequential collaboration network with sentiment coloring
Nielsen, F. Å. 2013
Publication: Research › Conference abstract for conference – Annual report year: 2015

Sparse Source EEG Imaging with the Variational Garrote
Publication: Research - peer-review › Article in proceedings – Annual report year: 2013

Spatio temporal media components for neurofeedback
Publication: Research - peer-review › Article in proceedings – Annual report year: 2013

Surface-Enhanced Raman Spectroscopy Based Quantitative Bioassay on Aptamer-Functionalized Nanopillars Using Large-Area Raman Mapping
Publication: Research - peer-review › Journal article – Annual report year: 2013

Towards a universal representation for audio information retrieval and analysis
Publication: Research - peer-review › Conference article – Annual report year: 2013

Unsupervised knowledge structuring Application of Infinite Relational Models to the FCA visualization
Publication: Research - peer-review › Article in proceedings – Annual report year: 2013

Variance inflation in high dimensional Support Vector Machines
Publication: Research - peer-review › Journal article – Annual report year: 2013

How Low Can You Go: Spatial Frequency Sensitivity in Pure Alexia
Starrfelt, R., Nielsen, S., Habekost, T. & Andersen, T. 2012
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2013

Integration of top-down and bottom-up information for audio organization and retrieval
Publication: Research › Ph.D. thesis – Annual report year: 2013

Joint Modelling of Structural and Functional Brain Networks
Publication: Research - peer-review › Paper – Annual report year: 2012

Link prediction in weighted networks
Publication: Research - peer-review › Article in proceedings – Annual report year: 2012
Multi-colorimetric sensor array for detection of illegal materials
Publication: Research - peer-review › Article in proceedings – Annual report year: 2013

Semi-supervised Eigenvectors for Locally-biased Learning
Publication: Research - peer-review › Article in proceedings – Annual report year: 2013

String matching with variable length gaps
Publication: Research - peer-review › Journal article – Annual report year: 2012

Demonstration: A smartphone 3D functional brain scanner
Publication: Research › Conference abstract for conference – Annual report year: 2011

Projects:

Reducing the rate and duration of re-admission among patients with unipolar and bipolar disorder using smartphone-based monitoring and treatment
Bardram, J. E. & Winther, O.
01/03/2016 → 01/09/2019
Project

Computational methods for wind-energy forecasting
Guillot, G., Pinson, P. & Bezzera, E.
01/02/2015 → 29/02/2016
Project

Non-Linear Temporal Machine Learning Models for Conditioning Monitoring in Large-Scale Solar Energy Systems
Maaløe, L. & Winther, O.
15/12/2014 → 15/12/2017
Project

Benchmarking and extending models of real estate price prediction, under financial regulation requirements
Guillot, G., Katoussky, A., Thygesen, U. H. & Dalhoff, J.
01/09/2014 → 01/10/2017
Project

Computational Landscape Genomics
Guillot, G., Storfer, A., Poss, M. & Antolin, M.
01/10/2013 → …
Project

Population structure
Guillot, G. & Orlando, L.
01/07/2013 → …
Project

Deep Belief Nets for Topic Modeling
Maaløe, L. & Winther, O.
01/02/2013 → 01/03/2014
Project
Activities:

Integration of Nanopillar SERS Substrates in a Microfluidic Platform for Analyte Separation and Quantitative Sensing
Durucan, O. (Guest lecturer), Morelli, L. (Guest lecturer), Wu, K. (Guest lecturer), Viehrig, M. (Guest lecturer), Ilichevko, O. (Guest lecturer), Zor, K. (Guest lecturer), Matteucci, M. (Guest lecturer), Alström, T. S. (Guest lecturer), Rindzevicius, T. (Guest lecturer), Schmidt, M. S. (Guest lecturer), Boisen, A. (Guest lecturer)
11 Jun 2017 → 17 Jun 2017
Activity: Talks and presentations › Conference presentations

WikiCite 2016
Nielsen, F. Å. (Participant)
25 May 2016 → 26 May 2016
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

An Introduction to Multisensory Perception
Andersen, T. (Lecturer)
8 Sep 2015
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

ICES
Guillot, G. (Participant)
9 Jun 2015
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Member of PhD committee (External organisation)
Guillot, G. (Participant)
May 2015
Activity: Membership › Membership in review committee

Model and inference algorithm to combine genetic, phenotypic and geographic information
Guillot, G. (Invited speaker)
29 Apr 2015
Activity: Talks and presentations › Conference presentations

Combining text mining and coordinate-based meta-analysis
Nielsen, F. Å. (Invited speaker)
21 Apr 2015
Activity: Talks and presentations › Conference presentations

Models and Modes of Audiovisual integration
Andersen, T. (Lecturer)
18 Feb 2015
Activity: Talks and presentations › Conference presentations

10th Danish-French workshop in Spatial Statistics
Guillot, G. (Invited speaker)
2014
Activity: Talks and presentations › Conference presentations

Assessment committee PhD Scholarships, DTU compute (External organisation)
Guillot, G. (Participant)
10 Nov 2014
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar
Modeling categorial audiovisual perception: pitfalls and solutions
Andersen, T. (Lecturer)
7 Nov 2014
Activity: Talks and presentations › Conference presentations

Workshop on effects of global change on species' range fluctuations using intra-specific genetic variation in both phenotypic and molecular data
Guillot, G. (Invited speaker)
Activity: Talks and presentations › Conference presentations

An Introduction to Multisensory Perception
Andersen, T. (Lecturer)
2 Sep 2014
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Early Maximum-Likelihood Estimation as a model of audiovisual integration of speech
Andersen, T. (Lecturer)
11 Jun 2014
Activity: Talks and presentations › Conference presentations

Lecture
Guillot, G. (Lecturer)
Apr 2014
Activity: Talks and presentations › Conference presentations

Seminar of the Department of Biology
Guillot, G. (Participant)
Apr 2014
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

17th International Conference on Artificial Intelligence and Statistics
Hansen, S. T. (Participant)
22 Apr 2014 → 25 Apr 2014
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Computational Models of Attention and Perception
Andersen, T. (Lecturer)
28 Jan 2014
Activity: Talks and presentations › Conference presentations

Journal of the Royal Statistical Society (Journal)
Guillot, G. (Editor)
1 Jan 2014 → 31 Dec 2014
Activity: Research › Journal editor

Member of the Editorial Board Population Ecology (External organisation)
Guillot, G. (Participant)
1 Jan 2014 → 31 Dec 2014
Activity: Membership › Board duties in companies, associations, or public organisations

Arieties of cross-modal interactions and multi-sensory integration effects: Invited lecture at Otto-von-Guericke-Universität Magdeburg, Germany
Andersen, T. (Lecturer)
29 Nov 2013
Activity: Talks and presentations › Conference presentations
An Introduction to Multisensory Perception
Andersen, T. (Guest lecturer)
9 Sep 2013
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Estimating the phylogenetic history for two related populations A Hidden Markov Model approach to finding phylogenetic trees
Guillot, G. (Internal examiner)
Jul 2013
Activity: Examinations and supervision › Internal examination

Journal of the Royal Statistical Society, series A (Journal)
Guillot, G. (Editor)
2012 → 2014
Activity: Research › Journal editor

Prizes:

Molecular Ecology best reviewer 2013
Gilles Guillot (Recipient), Jan 2013
Prize: Prizes, scholarships, distinctions

Press clippings:

Banksy in Boston? Nope, just bots in Copenhagen
Sune Lehmann Jørgensen
04/12/2013
1 media contribution
Press / Media