Bo Friis Nielsen - DTU Orbit (23/12/2017)

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Department of Applied Mathematics and Computer Science - Professor

Statistics and Data Analysis

Publications:

A probabilistic approach to urban flooding from sea surges in Copenhagen
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Matrix-Exponential Distributions in Applied Probability
Publication: Research - peer-review › Book – Annual report year: 2017

Modelling Dietary Exposure to Chemical Components in Heat-Processed Meats
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2017

On the Scheduling of Operating Theatres by using a Simulation-based Markov Decision Process
Publication: Research - peer-review › Paper – Annual report year: 2017

Optimization of hospital ward resources with patient relocation using Markov chain modeling
Publication: Research - peer-review › Journal article – Annual report year: 2017

Causal Analysis of Railway Running Delays
Publication: Research - peer-review › Paper – Annual report year: 2016

On the use of functional calculus for phase-type and related distributions
Publication: Research - peer-review › Journal article – Annual report year: 2015

Probabilistic modelling of sea surges in coastal urban areas
Publication: Research - peer-review › Conference abstract in journal – Annual report year: 2016

Calculation of ruin probabilities for a dense class of heavy tailed distributions
Publication: Research - peer-review › Journal article – Annual report year: 2014

Optimization of Overflow Policies in Call Centers
Publication: Research - peer-review › Journal article – Annual report year: 2015
Logics and Models for Stochastic Analysis Beyond Markov Chains
Publication: Research › Ph.D. thesis – Annual report year: 2013

Moment distributions of phase-type
Publication: Research › Conference abstract in journal – Annual report year: 2012

On the representation of distributions with rational moment generating functions
Publication: Research › Report – Annual report year: 2012

Analysis of Queues with Rational Arrival Process Components - A General Approach
Publication: Research › Report – Annual report year: 2011

A Probabilistic Model of the LMAC Protocol for Concurrent Wireless Sensor Networks
Publication: Research - peer-review › Article in proceedings – Annual report year: 2011

A Stochastic Broadcast Pi-Calculus
Publication: Research - peer-review › Conference article – Annual report year: 2011

Fisher information and statistical inference for phase-type distributions
Publication: Research - peer-review › Journal article – Annual report year: 2011

Maximum likelihood estimation of phase-type distributions
Publication: Research › Ph.D. thesis – Annual report year: 2010

Moment Distributions of Phase Type
Bladt, M. & Nielsen, B. F. 2011 In : Stochastic Models. 27, 4, p. 651
Publication: Research › Journal article – Annual report year: 2011

Queues with waiting time dependent service
Bekker, R., Koole, G. M., Nielsen, B. F. & Nielsen, T. B. 2011 In : Queueing Systems. 68, 1, p. 61-78
Publication: Research - peer-review › Journal article – Annual report year: 2011

Call Center Capacity Planning
Publication: Research › Ph.D. thesis – Annual report year: 2010

Effective population management practices in diabetes care - an observational study
Publication: Research - peer-review › Journal article – Annual report year: 2010
Model Checking Multivariate State Rewards
Publication: Research - peer-review › Article in proceedings – Annual report year: 2010

Multivariate Matrix-Exponential Distributions
Publication: Research - peer-review › Journal article – Annual report year: 2010

On the Construction of Bivariate Exponential Distributions with an Arbitrary Correlation Coefficient
Publication: Research - peer-review › Journal article – Annual report year: 2010

Quasi-Birth-and-Death Processes with Rational Arrival Process Components
Publication: Research - peer-review › Journal article – Annual report year: 2010

Moment Distributions of Phase Type
Publication: Research › Report – Annual report year: 2009

Multivariate matrix-exponential distributions
Publication: Research › Report – Annual report year: 2008

Multivariate matrix-exponential distributions
Publication: Research › Article in proceedings – Annual report year: 2008

On the construction of bivariate exponential distributions with an arbitrary correlation coefficient
Publication: Research › Report – Annual report year: 2008

Queues with waiting time dependent service
Publication: Research - peer-review › Journal article – Annual report year: 2008

Markovian Building Blocks for Individual-Based Modelling
Publication: Research › Ph.D. thesis – Annual report year: 2007

Higher order moments and conditional asymptotics in the Batch Markovian Arrival Process
Publication: Research - peer-review › Journal article – Annual report year: 2007

Quasi-Birth-and-Death Processes with Rational Arrival Process Components
Publication: Research › Report – Annual report year: 2007
On the statistical implications of certain Random permutations in Markovian Arrival Processes (MAPs) and second order self-similar processes
Publication: Research - peer-review › Journal article – Annual report year: 2000

PH-distributions arising through conditioning
Publication: Research - peer-review › Journal article – Annual report year: 2000

Similarity transformations of MAPs
Andersen, A. T., Barker, V. A. & Nielsen, B. F. 1999 In : Mathematical Problems in Engineering. 5, p. 349-359
Publication: Research - peer-review › Journal article – Annual report year: 1999

A Markovian approach for modeling packet traffic with long range dependence
Publication: Research - peer-review › Journal article – Annual report year: 1998

On the implications of certain random permutations of inter-arrival times or counts in a point process
Andersen, A. T. & Nielsen, B. F. 1998 Informatics and Mathematical Modelling, Technical University of Denmark, DTU.
Publication: Research - peer-review › Report – Annual report year: 1998

On the significance of arrival process descriptions in packet traffic
Publication: Research - peer-review › Article in proceedings – Annual report year: 1998

A Computational Framework for a Quasi Birth and Death Process A Computational Framework for a Quasi Birth and Death Process with a Continuous Phase Variable
Publication: Research - peer-review › Article in proceedings – Annual report year: 1997

A Computational Framework for a Quasi Birth and Death Process with a Continous Phase Variable.
Publication: Research - peer-review › Article in proceedings – Annual report year: 1997

An application of superpositions of two-state Markovian sources to the modelling of self-similar behaviour
Publication: Research - peer-review › Article in proceedings – Annual report year: 1997

On the use of second order descriptors to characterize MAPs
Publication: Research - peer-review › Report – Annual report year: 1997

On the use of second order descriptors to characterize MAP
Andersen, A. T. & Nielsen, B. F. 1997 Informatics and Mathematical Modelling, Technical University of Denmark, DTU.
Publication: Research - peer-review › Report – Annual report year: 1997
An application of superpositions of two-state Markovian sources to the modelling of self-similar behaviour.
Publication: Research - peer-review › Report – Annual report year: 1996

Discrete-Time Analysis of a Finite Queue with Rework
Publication: Research - peer-review › Article in proceedings – Annual report year: 1996

Predator foraging in patchy environments : the interrupted poisson process (IPP) model unit
Publication: Research - peer-review › Journal article – Annual report year: 1996

Superposition and Effective Bandwidth of Renewal Streams
Blaabjerg, S., Andersen, A. T. & Nielsen, B. F. 1996 IMM.
Publication: Research - peer-review › Report – Annual report year: 1996

Transferability between Hospitals of Hypercalcaemia Discriminant Functions
Publication: Research - peer-review › Journal article – Annual report year: 1991

Transfer of hypercalcaemia discriminant functions between
Publication: Research - peer-review › Journal article – Annual report year: 1996

Within centre evaluation of hypercalcaemia discriminant
Publication: Research - peer-review › Journal article – Annual report year: 1996

An experimental study of queueing performance of MAPs with apparently self-similar behaviour
Andersen, A. T. & Nielsen, B. F. 1995 IMM.
Publication: Research - peer-review › Report – Annual report year: 1995

Intercept and Asymptotic Behaviour of the nGI/G/1
Publication: Research - peer-review › Article in proceedings – Annual report year: 1995

Modelling and performance study of packet-traffic with self-similar characteristics over several timescales with Markovian Arrival Processes MAP
Publication: Research - peer-review › Article in proceedings – Annual report year: 1995

Modelling of apparently self-similar packet arrival processes with Markovian Arrival Processes MAP
Andersen, A. T., Jensen, A. & Nielsen, B. F. 1995 IMM.
Publication: Research - peer-review › Report – Annual report year: 1995

Statistisk undersøgelse af arbejdsbelastningen på en fødegang
Publication: Research › Journal article – Annual report year: 1995

Analysis of the Telecommunication Demands in a Large, Geographically Dispersed Company
Møller, D. M. & Nielsen, B. F. 1994 IMM.
Publication: Research - peer-review › Report – Annual report year: 1994
Do local hospitals meet the analytical goals for the use of common reference intervals
Publication: Research - peer-review › Journal article – Annual report year: 1994

Modelling a Buffer System as an M/PH/1/N
Møller, D. M. & Nielsen, B. F. 1994 IMM.
Publication: Research - peer-review › Report – Annual report year: 1994

Statistik analyse af arbejdsbelastning på en fødegang
Andersen, A. T., Grove, N. U. & Nielsen, B. F. 1994 IMM.
Publication: Research - peer-review › Report – Annual report year: 1994

Using Program Package NSPCG to Analyze the Trunk Reservation Service Protection Method
Publication: Research - peer-review › Journal article – Annual report year: 1994

Analysis of the Telecommunication Demands in a Large Geographically Dispersed Company
Publication: Research - peer-review › Article in proceedings – Annual report year: 1993

A transient queueing study of delay during changeover in the Message Transfer Part MTP
Publication: Research - peer-review › Article in proceedings – Annual report year: 1993

Evaluation of a method for online control of the metering system in the analogue telephone network
Publication: Research - peer-review › Article in proceedings – Annual report year: 1993

Filtering clinically significant hypercalcaemia from non-significant hypercalcaemia at the laboratory level
Publication: Research - peer-review › Journal article – Annual report year: 1993

Modelling the End-to-End Message Transfer Distribution in the ATCS Communication System
Publication: Research - peer-review › Article in proceedings – Annual report year: 1993

A Phase Type Model for the Trunk Reservation Protection Method
Publication: Research - peer-review › Article in proceedings – Annual report year: 1992

Traffic models of the Message Transfer Part MTP
Publication: Research - peer-review › Article in proceedings – Annual report year: 1992

A Combined Petri-Net and Markov Chain Analysis of an FMS
Publication: Research - peer-review › Article in proceedings – Annual report year: 1991

Alternative diagnostic hypercalcaemia discriminant functions varied on incomplete datasets
Publication: Research - peer-review › Article in proceedings – Annual report year: 1991
Does Quality Control Work Between Local Hospitals?
Publication: Research - peer-review › Article in proceedings – Annual report year: 1991

The Use of Phase Type Distributions for Modelling Packet-Switched Traffic
Publication: Research - peer-review › Article in proceedings – Annual report year: 1991

Discriminant functions in different geographical areas
Publication: Research - peer-review › Article in proceedings – Annual report year: 1990

Handling incomplete data sets with statistical techniques
Frølich, A., Nielsen, B. F., Conradsen, K. & McNair, P. 1990 Handling incomplete data sets with statistical techniques. p. 61-64
Publication: Research - peer-review › Article in proceedings – Annual report year: 1990

Investigation of the transferability of clinical chemical data
Frølich, A. & Nielsen, B. F. 1990 Proceedings of the 8th Nordic Meeting on Medical and Biological Engineering. 
Publication: Research - peer-review › Article in proceedings – Annual report year: 1990

Respective roles of PTH and substrate for the l-hydroxylation of vitamin D in primary hyperparathyroidism PHP
Publication: Research - peer-review › Journal article – Annual report year: 1990

The Analysis of a Manufacturing Unit by Sparse Matrix Techniques
Publication: Research - peer-review › Article in proceedings – Annual report year: 1990

Anvendelse af kønetværk til produktionsstyring
Nielsen, B. F. 1989 IMSOR. 
Publication: Research - peer-review › Report – Annual report year: 1989

A Tool for Performance Analysis of Product Form Queueing Networks - ANQUEUE
Publication: Research - peer-review › Article in proceedings – Annual report year: 1989

Estimation of traffic models for a packet-switched network
Publication: Research - peer-review › Article in proceedings – Annual report year: 1989

The analysis of service protection methods in service integrated networks by large scale Markov processes
Publication: Research - peer-review › Article in proceedings – Annual report year: 1989

The exact evaluation of the {M/D/1/n
Publication: Research - peer-review › Article in proceedings – Annual report year: 1989

Modelling of Multiple Access Systems with Phase Type Distributions
Nielsen, B. F. May 1988
Service Protection by Time-in
Publication: Research - peer-review › Article in proceedings – Annual report year: 1988

The exact evaluation of the \( M/D/1/n \)
Iversen, V. B., Kragh, A. L. & Nielsen, B. F. 1988 IMSOR.
Publication: Research - peer-review › Report – Annual report year: 1988

A Service Protection Model
Publication: Research - peer-review › Article in proceedings – Annual report year: 1987

Respective roles of PTH and substrate for the \( \text{I-hydroxylation} \) of vitamin D in primary hyperparathyroidism PHP
Publication: Research - peer-review › Article in proceedings – Annual report year: 1987

Comments to a Paper by V. Giorno, C. Negri and A. G. Nobile
Publication: Research - peer-review › Journal article – Annual report year: 1986

Estimation af parameterværdier i Cox-fordeleger til trafikanalyse
Publication: Research - peer-review › Article in proceedings – Annual report year: 1986

Coxfordelinger egenskaber og anvendelser
Nielsen, B. F. 1985 IMSOR.
Publication: Research - peer-review › Report – Annual report year: 1985

Some Properties of Coxan Distributions with Applications
Publication: Research - peer-review › Article in proceedings – Annual report year: 1985

Projects:

Load Environment Modelling and Forecasting
Glavind, S. T., Faber, M. H., Nielsen, B. F., Sørensen, J. D. & Thøns, S.
01/09/2016 → 31/08/2019
Project: PhD

Estimation in Markov models of cancer
Serhan, S. K., Nielsen, B. F., Andersen, K. K. & Bladt, M.
01/12/2015 → 31/10/2016
Project: PhD

Matrix-exponential methods in finance, risk and queuing theory
Peralta Gutierrez, O., Nielsen, B. F. & Bladt, M.
01/10/2015 → 30/09/2018
Project: PhD

Risk assessment with matrix-analytic methods
Campillo Navarro, A., Nielsen, B. F. & Bladt, M.
15/07/2015 → 14/07/2018
Optimization of Services and Resources in Health Care
Andersen, A. R., Stidsen, T. J. R., Nielsen, B. F. & Reinhardt, L. B.
01/07/2015 → 30/06/2018
Project: PhD

Real Time Decision Support in the Face of Evolving Natural Hazards
Anders, A., Nishijima, K., Faber, M. H., Nielsen, B. F., Chatzi, E. & Kroon, I. B.
01/03/2011 → 28/04/2014
Project: PhD

Refinement and application of the method of successive calculations in transport project evaluations
Meisch, D., Nielsen, B. F., Leleur, S., Van Dijk, N. M., Conradsen, K., Telek, M. & Van Dijk, N. M.
01/06/2010 → 02/09/2014
Project: PhD

Logics and models for stochastic analysis of information systems
Zeng, K., Nielsen, B. F., Nielson, F., Zhang, L., Buchholz, P. & Hillston, J.
01/11/2009 → 07/03/2013
Project: PhD

Applications of and statistical inference for Multivariate Matrix Exponential Distributions
Esparza, L. J. R., Nielsen, B. F., Bladt, M., Thygesen, U. H., Casale, G. & Telek, M.
15/08/2007 → 30/03/2011
Project: PhD

Design of computer experiments
Dehlendorff, C., Andersen, K. K., Kulahci, M., Nielsen, B. F., Lophaven, S. N. & Tyssedal, J.
01/03/2007 → 08/12/2010
Project: PhD

Call Center Capacity Planning
Nielsen, T. B., Nielsen, B. F., Iversen, V. B., Stolletz, R., Borst, S. & Nyberg, C.
01/08/2006 → 31/03/2010
Project: PhD

Identification of Ecological Thresholds of Sustainability in Marine Ecosystems
Møller, J. K., Madsen, H., Carstensen, N. J., Nielsen, B. F., Ditlevsen, S. & Guttorm, P.
01/08/2006 → 25/05/2011
Project: PhD

Performance of Multi-Service Mobile Networks
Benetis, V., Iversen, V. B., Dittmann, L., Nielsen, B. F., Emstad, P. J. & Giner, V. C.
01/10/2003 → 29/10/2007
Project: PhD

Probabilistic Networks: Diagnostic Decision Support Systems
Andersen, M. N., Winther, Ø., Hansen, L. K., Nielsen, B. F., Gerds, T. A. & Heskes, T.
15/05/2003 → 05/11/2007
Project: PhD

Estimationsteori for stokastiske differentialligninger
Nolsøe, K., Madsen, H., Kessler, M., Nielsen, B. F., Jørgensen, B. & Rydén, T.
01/10/2002 → 15/01/2007
Project: PhD
Stokastisk model til beskrivelse af trafik dynamik i tidsperioder med stationær trafik
Christensen, T. K., Nielsen, B. F. & Iversen, V. B.
01/10/2001 → 22/08/2003
Project: PhD

Bayesian Modelling for Multi-Agent control
Quinonero, J., Hansen, L. K., Rasmussen, C. E., Nielsen, B. F., Andersen, J. D. & Williams, C. K. I.
01/04/2001 → 01/10/2004
Project: PhD

Optimal foraging theory applied to simple models of patchy environments
15/03/2001 → 08/02/2007
Project: PhD

TDM prestudy
Nielsen, B. F., Thyregod, P. & Larsen, P. B.
02/04/1997 → 15/05/1997
Project

Research visit at Bell Communications Research
Nielsen, B. F. & Ramaswami, V.
01/09/1995 → 31/08/1996
Project

Evaluering og dimensionering af signalingssystemer for digitale kommunikationssystemer
Andersen, A. T. & Nielsen, B. F.
01/11/1992 → 13/02/1996
Project: PhD

Methods for analysis and dimensioning of heterogeneous telecommunication networks
Møller, D. M. & Nielsen, B. F.
01/02/1992 → 24/04/1995
Project: PhD

Hypercalcaemia Discriminant Functions
Nielsen, B. F., Conradsen, K., Froelich, A., McNair, P., Transboel, I. & Nielsen, J.
01/10/1985 → …
Project