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Experience

- 2014-2015 Wind energy expert for the London law firm Bristows LLP in a patent dispute between major players in the wind energy business.
- 2004-2006 Vestas Wind Systems A/S. Control Engineer
- 2002-2003 Neg-Micon A/S. Control Engineer
- 1986-1987 Energy and Atmospheric Physics Department at Risø National Laboratory. Research assistant

Publications

Stochastic MPC with focus on probabilistic constraints with application to wind turbine control

Knudsen, T., Hassani, S. & Wisniewski, R., 10 Jul 2025, *2025 American Control Conference (ACC)*. IEEE (Institute of Electrical and Electronics Engineers), p. 2842-2849 8 p. 11107802. (Annual American Control Conference (ACC)).

Stochastic Differential Equations with State Dependent Diffusion - 2 Order Statistics and State Estimation

Knudsen, T., 1 Jul 2023, In: *IFAC-PapersOnLine*. 56, 2, p. 5943-5950 8 p.

Particle Filters Revisited*

Knudsen, T. & Leth, J.-J., 2020, *2020 Australian and New Zealand Control Conference (ANZCC)*. IEEE (Institute of Electrical and Electronics Engineers), p. 36-41 6 p. 9318384

A New Continuous Discrete Unscented Kalman Filter

Knudsen, T. & Leth, J.-J., 1 May 2019, In: *IEEE Transactions on Automatic Control*. 64, 5, p. 2198-2205 8 p., 8447294.

Wind Farm Power Forecasting for Less Than an Hour Using Multi Dimensional Models

Knudsen, T., Bak, T. & Jensen, T. N., 29 Nov 2018, *Proceedings, European Control Conference 2018*. IEEE (Institute of Electrical and Electronics Engineers), p. 3057-3064 8 p.

Stochastic MPC Using the Unscented Transform

Knudsen, T. & Leth, J., 9 Aug 2018, *2018 Annual American Control Conference, ACC 2018*. IEEE (Institute of Electrical and Electronics Engineers), p. 4718-4724 7 p. 8430903

Survey of wind farm control - power and fatigue optimization

Knudsen, T., Bak, T. & Svenstrup, M., Aug 2015, In: *Wind Energy*. 18, 8, p. 1333-1351

Wind turbine state estimation

Knudsen, T., 26 Mar 2014, 41 p.

Simple Model for Describing and Estimating Wind Turbine Dynamic Inflow

Knudsen, T. & Bak, T., 17 Jun 2013, *American Control Conference (ACC), 2013*. IEEE (Institute of Electrical and Electronics Engineers), p. 640-646 7 p. (Proceedings of the American Control Conference).

Wind Farm Control Survey

Knudsen, T., Bak, T. & Svenstrup, M., 20 May 2013, 28 p.

Detection of Excessive Wind Turbine Tower Oscillations Fore-Aft and Sideways

Knudsen, T., Bak, T. & Tabatabaeipour, S. M., 27 Jun 2012, *2012 American Control Conference (ACC)*. p. 5795-5800 6 p. (American Control Conference).

Awareness and its use in Incremental Data Driven Modelling for Plug and Play Process Control

Knudsen, T., Bendtsen, J. D. & Trangbæk, K., 2012, In: *European Journal of Control*. 18, 1, p. 24-37 14 p.

Data Driven Modelling of the Dynamic Wake Between Two Wind Turbines

Knudsen, T. & Bak, T., 2012, *16th IFAC Symposium on System Identification*. Elsevier, Vol. 16. p. 1677-1682 6 p. (I F A C Workshop Series).

Wind Farm Wake Models From Full Scale Data

Knudsen, T. & Bak, T., 2012, *Proceedings of EWEA 2012*. The European Wind Energy Association

Amendment to Validated dynamic flow model: Aeolus deliverable no.: 2.5A

Knudsen, T., 3 Oct 2011, 16 p.

Prediction models for wind speed at turbine locations in a wind farm

Knudsen, T., Bak, T. & Soltani, M., 8 Aug 2011, In: *Wind Energy*. 14, 7, p. 877-894

Validated dynamic flow model: Aeolus deliverable no.: 2.5

Knudsen, T., 26 Jan 2011, 38 p.

Awareness and Its Use in Plug and Play Process Control

Knudsen, T., 2009, *European Control Conference 2009 - ECC'09*. IEEE Press, p. 4078-4084

Distributed Control of Large-Scale Offshore Wind Farms

Knudsen, T., Bak, T. & Soltani, M., 2009. 8 p.

Incremental Data Driven Modelling for Plug and Play Process Control

Knudsen, T., 2009, *European Control Conference 2009 - ECC'09*. IEEE Press, p. 4683 6 p.

Prediction Models for Wind Speed at Turbines in a Farm with Application to Control

Knudsen, T., Soltani, M. & Bak, T., 2009, *Extended Abstracts for Euromech Colloquium 508 on Wind Turbine Wakes*. E.T.S.I. Industriales Universidad Politécnica de Madrid

Preliminary Dynamic Model - Aeolus - WP2

Knudsen, T. & Soltani, M., 2009, Aalborg Universitet.

Plug and Play Process Control Applied to a District Heating System

Knudsen, T., Trangbæk, K. & Kallesøe, C. S., 2008, In: Elsevier IFAC Publications / IFAC Proceedings series. 1

Dynamic Modeling of Renal Blood Flow in Dahl Hypertensive and Normotensive Rats

Knudsen, T., Elmer, H., Knudsen, M., Holstein-Rathlou, N. H. & Stoustrup, J., 2004, In: *IEEE Transactions on Biomedical Engineering*. 51, 5, p. 689-697

Subspace Identification: Reducing Uncertainty on the Stochastic Part

Knudsen, T., 2002, *15th IFAC World Congress 2002*.

Consistency analysis of subspace identification methods based on a linear regression approach
Knudsen, T., 2001, In: Automatica. p. 81-89

Subspace Identification: Reducing Uncertainty on the Stochastic Part
Knudsen, T., 2001.

Preliminary Test for Nonlinear Input Output Relations in SISO Systems
Knudsen, T., 2000, *Symposium on System Identification - IFAC SYSID 2000*.

Test for Nonlinear Input Output Relations in SISO Systems by Preliminary Data Analysis
Knudsen, T., 2000.

Comparing PI and Robust Pitch Controllers on a 400KW Wind Turbine by Full Scale Tests
Knudsen, T., Andersen, P. & Tøffner-Clausen, S., 1997, *Proceedings of European Wind Conference, October 1997, Dublin*.

Comparing PI and Robust Pitch Controllers on a 400kw Wind Turbine by full scale Tests
Knudsen, T., Andersen, P. & Tøffner-Clausen, S., 1997, Department of Control Engineering.

Optimal Calculation of Residuals for ARMAX Models with Applications to Model Verification
Knudsen, T., 1997, In: European Journal of Control. p. 235-246

Optimal Calculation of Residuals for ARMAX Models with Applications to Model Verification
Knudsen, T., 1997.

The Initialization Problem in Parameter Estimating for General SISO Models
Knudsen, T., 1996, *Preprints of 13th World Congress of IFAC International Federation of Automatic Control, San Francisco June 30-July 5*. p. 221-226

Accounting for Unknown Initial Conditions When Using Residual Tests for ARMAX Models
Knudsen, T., 1994, *Proceedings of the 10th IFAC Symposium on System Identification, Copenhagen, July 1994*.
Technical University of Denmark (DTU), p. 631-637

A New Method for Estimating ARMAX Models
Knudsen, T., 1994, *Proceedings of the 10th IFAC Symposium on System Identification, Copenhagen July 1994*.
Technical University of Denmark (DTU), p. 611-617

Systemidentifikation. System Identification
Knudsen, T., 1993, 122 p. (Aalborg Universitetscenter. Institut for Elektroniske Systemer. Afdeling for Proceskontrol - Rapport).

A Stochastic Wind Model Covering Periods Ranging from a Fortnight to a Second
Knudsen, T., 1990, In: *Wind Engineering : The International Journal of Wind Power*. p. 387-404

Start/stop strategier for Vind-Diesel Systemer
Knudsen, T., 1989, Lyngby IMSOR DTH: Technical University of Denmark (DTU).

Evaluation of Diesel start/stop strategies in a wind/Diesel system by simulation.
Knudsen, T., 1987, *Wind Energy Conversion 1987*. Mech. Engng. Publications Ltd

Projects

Center for Mathematical Modelling of Physiological Processes

Stoustrup, J. (Project Participant), Knudsen, T. (Project Participant), Knudsen, M. H. (Project Participant), Rasmussen, T. (Project Participant), Elmer, H. (Project Participant), Schrøder, R. L. K. (Project Participant), Olesen, S. P. (Project Participant), Bech, M. (Project Participant), Holstein-Rathlou, N.-H. (Project Participant), Lauritzen, M. (Project Participant) & Dalgaard, P. (Project Participant)

Danish Ministry of Science, Technology and Innovation, NeuroSearch A/S, Det Teknisk-Naturvidenskabelige Fakultet
30/06/2004 → 30/06/2004

CL Windcon

Bak, T. (Project Participant), Knudsen, T. (Project Participant), Beckers, D. (Project Licensee) & Ayesa-Pascual, P. (Project Coordinator)

01/11/2016 → 31/10/2019

Concurrent Aero-Servo-Elastic analysis and Design of wind turbines (CASED)

Stoustrup, J. (Project Participant), Knudsen, T. (Project Participant), Hansen, M. H. (Project Participant), Markou, H. (Project Participant), Kallesøe, B. S. (Project Participant), Poulsen, N. K. (Project Participant), Svendsen, R. (Project Participant), Castaignet, D. (Project Participant), Olesen, N. A. (Project Participant) & Svendsen, M. N. (Project Participant)

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01/01/2008 → 31/12/2011

AEOLUS: Distributed Control of Large-Scale Offshore Wind Farms

Bak, T. (Project Manager), Knudsen, T. (Project Participant) & N. Soltani, M. (Project Participant)

ICT - INFORMATION AND COMMUNICATION TECHNOLOGIES

01/05/2008 → 30/04/2010

ICONIC

Wisniewski, R. (Project Licensee), Knudsen, T. (Project Participant), Hassani, S. (Project Participant) & Blaabjerg, F. (Project Participant)

01/12/2023 → 30/11/2027

Modelling and Control of Type 2 Diabetes

Leth, J.-J. (PI) & Knudsen, T. (Col)

01/12/2019 → 01/01/2024

Optimal Spinning Reserve of Power Systems Considering Forecasting Error of Load and Wind Power Generation under Market Environment (OSRNordic)

Bak-Jensen, B. (Project Participant), Chen, P. (Project Participant) & Knudsen, T. (Project Participant)

01/07/2010 → 31/05/2014

Plug and Play Process Control (P^3C)

Stoustrup, J. (Project Manager), Kragelund, M. N. (Project Participant), Knudsen, T. (Project Participant), Michelsen, A. G. (Project Participant), Nielsen, K. M. (Project Participant), Pedersen, T. S. (Project Participant), Schiøler, H. (Project Participant), Bendtsen, J. D. (Project Participant), Wisniewski, R. (Project Participant), Nielsen, J. F. D. (Project Participant), Trangbæk, K. (Project Participant), Jensen, T. N. (Project Participant), De Persis, C. (Project Participant), Izadi-Zamanabadi, R. (Project Participant), Thybo, C. (Project Participant), Larsen, L. F. S. (Project Participant), Vadstrup, P. (Project Participant), Kallesøe, C. S. (Project Participant), Riisgaard-Jensen, M. (Project Participant), Hauberg Fischer, T. (Project Participant), Christensen, S. H. (Project Participant), Mølbak, T. (Project Participant), Just Nielsen, R. (Project Participant), Knudsen, J. (Project Participant) & Edlund, K. (Project Participant)

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01/09/2006 → 31/08/2011

OFFWIND: Prediction tools for offshore wind energy generation

Bak, T. (Project Participant), Knudsen, T. (Project Participant), Christensen, R. L. (Project Participant) & Svenstrup, M. (Project Participant)

01/01/2013 → 30/06/2015

PRESTIGE

Knudsen, T. (PI) & Santhanam, C. (Project Participant)
01/04/2020 → 31/03/2023

NORCOWE: The Norwegian Centre for Offshore Wind Energy (NORCOWE)

Sørensen, J. D. (Project Participant), Blaabjerg, F. (Project Participant), Chen, Z. (Project Participant), Bak, T. (Project Participant), Knudsen, T. (Project Participant), Jensen, T. N. (Project Participant), Hu, W. (Project Participant) & Nielsen, J. S. (Project Participant)
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01/01/2009 → 31/12/2017

The Top-level Research Initiative

Bak-Jensen, B. (Project Participant), Chen, P. (Project Participant) & Knudsen, T. (Project Participant)
01/09/2010 → 31/08/2013