Søren Kejser Jensen

Curriculum Vitae

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Department of Computer Science
Aalborg University
Selma Lagerløfs Vej 300,
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Academic Profile

Research: developing ModelarDB, the current state-of-the-art for managing high-frequency sensor data

Focus: using ModelarDB to notably improve renewable energy sources using high-frequency sensor data

Publications: 41.17% of all papers in top venues (★) and 23.52% of all papers in high-quality venues (☆)

Teaching: co-supervising a PhD student and lecturing and supervising both master and bachelor students

Languages: Danish (Native Speaker), English (Professional Level) (AAU UP - C1 CEFR Certification)

Professional Appointments

2024– **Tenure Track Assistant Professor**, Department of Computer Science, Aalborg University, Denmark

2018– **Co-founder and Chief Technology Officer**, ModelarData, Denmark

2021–2023 **Postdoc**, Department of Computer Science, Aalborg University, Denmark

2018–2021 **Research Assistant**, Department of Computer Science, Aalborg University, Denmark

Education

2015–2019 **PhD in Computer Science**, Department of Computer Science, Aalborg University

Thesis: Model-Based Time Series Management at Scale

Supervisors: Torben Bach Pedersen, Christian Thomsen, External Stay: Themis Palpanas

Selected Publications

★ are top conferences or journals and ☆ are high-quality conferences or journals

2024 **Scalable Model-Based Management of Massive High Frequency Wind Turbine Data with ModelarDB** ★
A. Abduvakhobov, S. K. Jensen, T. B. Pedersen, C. Thomsen. PVLDB
PDF: p4723-abduvakhobov.pdf, Repository: aabduvakhobov/ModelarDB-Analyzer

2024 **Evaluating the Impact of Error-Bounded Lossy Compression on Time Series Forecasting** ☆
C. E. Muñiz-Cuza, S. K. Jensen, J. Brusokas, N. Ho, T. B. Pedersen. EDBT
PDF: paper-102.pdf, Repository: cmcuza/EvalImpLSTS

2024 **Why Model-Based Lossy Compression is Great for Wind Turbine Analytics**. ★
S. K. Jensen, C. Thomsen, T. B. Pedersen, C. E. Muñiz-Cuza, A. Abduvakhobov. ICDE
DOI: 10.1109/ICDE60146.2024.00465

2023 **ModelarDB: Integrated Model-Based Management of Time Series from Edge to Cloud**. ☆
S. K. Jensen, C. Thomsen, T. B. Pedersen. TLDKS
PDF: 978-3-662-66863-4_1.pdf, Repository: skejserjensen/ModelarDB

2023 **Holistic Analytics of Sensor Data from Renewable Energy Sources: A Vision Paper**
S. K. Jensen, C. Thomsen. ADBIS (Short Papers)
Open science: PDF: 978-3-031-42941-5_31.pdf

2022 **Machine Learning Platform for Extreme Scale Computing on Compressed IoT Data**
S. Tirupathi, D. Salwala, G. Zizzo, A. Rawat, M. Purcell, S. K. Jensen, et al. IWBDR22
DOI: 10.1109/BigData55660.2022.10020540, Repository: MORE-EU

2021 **Scalable Model-Based Management of Correlated Dimensional Time Series in ModelarDB$_+$**. ★
S. K. Jensen, T. B. Pedersen, C. Thomsen. ICDE
DOI: 10.1109/ICDE51399.2021.00123, Repository: skejserjensen/ModelarDB

2019 **Demonstration of ModelarDB: Model-Based Management of Dimensional Time Series**. ☆
S. K. Jensen; T. B. Pedersen, C. Thomsen. SIGMOD
DOI: 10.1145/3299869.3320216, Repository: skejserjensen/ModelarDB

2018 **ModelarDB: Modular Model-Based Time Series Management with Spark and Cassandra**. ☆
S. K. Jensen; T. B. Pedersen; C. Thomsen. PVLDB
PDF: p1688-jensen.pdf, Repository: skejserjensen/ModelarDB

2017 **Time Series Management Systems: A Survey**. ☆
S. K. Jensen; T. B. Pedersen; C. Thomsen. TKDE
DOI: 10.1109/TKDE.2017.2740932

Selected Open-Source Software

2021– **ModelarDB** | ModelarData/ModelarDB-RS
A time series management system for managing high-frequency time series across edge, cloud, and client
Role: Project Founder, Architect, Developer, and Documentation Writer

2015–2022 **ModelarDB Legacy** | ModelarData/ModelarDB
A modular time series management system for managing high-frequency time series on edge and cloud
Role: Project Founder, Architect, Developer, and Documentation Writer

2009– **pygrametl** | pygrametl.org
A Python library with functionality for easily writing extract-transform-load programs for data warehouses
Role: Developer, Documentation Writer, and Website Maintainer

Other Dissemination

2024 **ModelarDB: Analytics of High-Frequency Time Series Across Edge, Cloud, and Client**
Danish Digitalization, Data Science and AI (D3A) C. Thomsen, S. K. Jensen
github.com/skejserjensen/ModelarDB/blob/master/slides/2024-10-23_D3A.pdf

2019 **Dagstuhl Seminar 19282 on Data Series Management**
Invited by *Anthony Bagnall*, *Richard L. Cole*, *Themis Palpanas*, and *Konstantinos Zoumpatianos*
dagstuhl.de/seminars/seminar-calendar/seminar-details/19282

Grants

2020–2023 **Management of Real-time Energy Data (MORE)** (Score: 15/15)
Europe Horizon 2020, cordis.europa.eu/project/id/957345
Aalborg University: T. B. Pedersen, C. Thomsen, N. Ho, S. K. Jensen
Consortium: € 3,720,553.75 and Aalborg University: € 587,500.00
Role: co-wrote state-of-the-art for time series management, data management and transfer tasks in WP2 (Edge), and data management tasks in WP4 (Cloud) in the application. Led WP2 in the last half of MORE.

2020–2021 **Improving Machine Learning Models for Wind Turbines by Enabling High-Frequency Sensor Data**
Microsoft AI for Earth. S. K. Jensen, T. B. Pedersen, C. Thomsen. $ 15,000 of Azure Credits

2017–2018 **Model-Based Storage and Analysis of Multidimensional Data Streams at Big Data Scale**
Microsoft Azure for Research. S. K. Jensen. $ 20,000 of Azure Credits

Community Service

★ are top conferences or journals and ☆ are high-quality conferences or journals

2025 MulTiSA (PC), PVLDB ★ (PC)

2024 ICDE ★ (External Reviewer), MulTiSA (PC), TBD, J. Supercomput, PVLDB ★ (PC)

2023 AID4RES23 (PC), ICDE ★ (Industry Track PC, External Reviewer)

2022 ICDE ★ (External Reviewer)

2021 ICDE ★ (External Reviewer)

2019 IEEE TKDE ★