

## Teaching portfolio

**1. Teaching CV: A list of any lecturing and supervision tasks, including specification of academic fields, scope, level (bachelor, master, continuing education, PhD) as well as any external examiner tasks.**

### Teaching since approximately 2015:

#### Keynote Lectures

1. "Digitalization in the Service of Society: The Case of Big Vehicle Trajectory Data," 34th International Conference on Scientific and Statistical Database Management, Copenhagen, Denmark, July 6–8, 2022.
  2. "Trajectory Data Analytics," ACM Turing Award Celebration Conference - China, Hefei, China, July 30–August 1, 2021. (online)
  3. "Improving Vehicle Routing Using Trajectory Data," Second ACM Spatial Data Intelligence China Conference, Hangzhou, China, April 22–24, 2021. (online)
  4. "Towards Smarter Cities: Using Trajectory Data for Vehicle Routing," 39th International Symposium on Reliable Distributed Systems, Shanghai, China, September 21–24, 2020. (online)
  5. "Themes in Temporal and Spatio-Temporal Data Management and Analytics—A Personal Retrospective," Twentyfirst IEEE International Conference on Mobile Data Management, Versaille, France, June 30–July 3, 2020. (online)
  6. "Using Massive Vehicle Trajectory Data for Routing," Eleventh International Conference on Management of Digital EcoSystems, Limassol, Cyprus, November 12–14, 2019.
  7. "Towards Trajectory-Based Personalized Routing," 36th China Computer Federation National Database Conference, Jinan, China, October 11–13, 2019.
  8. "Using Massive Trajectory Data for Vehicle Routing," Third International Joint APWeb-WAIM Conference, Chengdu, China, August 1–3, 2019.
  9. "Using Massive Data in Transportation," Global Artificial Intelligence Forum, Chengdu, China, July 30, 2019.
  10. "Value Creation from Massive Vehicle Trajectory Data: the Case of Routing," Fourth IEEE International Conference on Data Science in Cyberspace, Hangzhou, China, June 23–25, 2019.
  11. "Trajectory-based Computational Services for Transportation—the Case of Data-Intensive Vehicle Routing," TASMU-QCAI Artificial Intelligence in Transportation Workshop, Doha, Qatar, November 22, 2018.
  12. "Data-intensive Vehicle Routing," 30th International Conference on Scientific and Statistical Database Management, Bolzano, Italy, July 9–11, 2018.
  13. "Routing in Spatial Networks using Massive Vehicle Trajectory Data," Computational and Statistical Interface to Big Data Conference, Saudia Arabia, March 19–21, 2018.
  14. "Keyword-Based Querying of Geo-Textual Web Content," Eleventh Workshop on Geographic Information Retrieval, Heidelberg, Germany, November 30–December 1, 2017.
  15. "Keyword-Based Querying of Geo-Textual Content," Tenth International Conference on Similarity Search and Applications, Munich, Germany, October 4–6, 2017.
  16. "Data-Intensive Paradigms for Vehicle Routing," Fifteenth International Symposium on Spatial and Temporal Databases, Arlington, VA, USA, August 21–23, 2017.
  17. "Data-intensive Routing in Spatial Networks," The ACM Turing 50th Celebration Conference - China, Shanghai, China, May 12–14, 2017.
  18. "Trajectory-Based Routing in Spatial Networks," Twentysecond International Conference on Database Systems for Advanced Applications, Suzhou, China, March 27–30, 2017.
  19. "Keyword-Based Querying with Local Intent," GI Science Doctoral College Symposium, University of Salzburg, Austria, April 14, 2016.
  20. "Keyword-Based Querying of Geo-Tagged Web Content," Fifth International Conference on Model & Data Engineering, Rhodes, Greece, September 26–28, 2015.
  21. "Keyword-Based Querying of Geo-Spatial Data," Web Intelligence Summer School, Saint- ´ Etienne, France, August 31–September 4, 2015.
  22. "Querying of Geo-Textual Web Content: Concepts and Techniques," Third IEEE International Workshop on Human Mobility Computing and Privacy and Third IEEE International Workshop on Mobile Data Management, Mining, and Computing on Social Networks, Pittsburgh, PA, USA, June 15, 2015.
- Invited Lectures—Conferences, Distinguished Speaker Series, Etc.
1. "Big Trajectory Data Driven Vehicle Routing," Department of Computer Science and Engineering, University of California, Riverside, CA, USA, November 18, 2022. (online)
  2. "New Vehicle Routing Paradigms Enabled by Big Vehicle Trajectory Data," Machine Learning Seminar Series, School of Computer Science, The University of Auckland, Auckland, New Zealand, October 19, 2022. (online)
  3. "Aspects of the management and analysis of temporal, spatio-temporal, and multidimensional data," Summer School on Big Data, University of Basel Ph.D. Program on Biomedical Engineering, Grafenhausen, Germany, June 22 and 24, 2022.
  4. "Trajectory Data Analytics—Towards Increased Accuracy at Scale," Data Science and Analytics Webinar Series 2021, Hong Kong University of Science and Technology Big Data Institute, Hong Kong/Guangzhou, China,

November 8, 2021. (online)

5. "Laudation—Honorary Doctorate to Torben Bach Pedersen," Faculty of Computer Science, Technical University of Dresden, Dresden, Germany, September 29, 2021.
6. "Towards Smarter Transportation: Using Trajectory Data for Vehicle Routing," Department of Computer Science, Missouri University of Science and Technology, Rolla, MO, USA, April 19, 2021. (online)
7. "Querying Geo-Textual Data Using Keywords and User Location," School of Computer Science and Technology, Tianjin University, Tianjin, China, October 14, 2019.
8. "Querying Geo-Textual Data Using Keywords and User Location," School of Computer Science and Technology, Huazhong University of Science and Technology, Wuhan, China, October 9, 2019.
9. "Querying Geo-Textual Data Using Keywords," Summer School on Development, Deployment, and Runtime of Context-Aware Software Systems, Schloss Dagstuhl, Wadern, Germany, September 17, 2019.
10. "Temporal and Spatio-Temporal Data Management," TCDE Impact Award lecture, 35th IEEE International Conference on Data Engineering, Macau SAR, China, April 10, 2019.
11. "New Paradigms for Data-Intensive Vehicle Routing," School of Computing, Informatics, and Decision Systems Engineering Distinguished Guest Lecture Series, Arizona State University, AZ, USA, November 2, 2018.
12. "Using Big Trajectory Data for Next-Generation Vehicle Routing," Distinguished Lecture, The Hong Kong Polytechnic University, Faculty of Engineering, Hong Kong, China, April 12, 2018.
13. "Enabling High-Quality and Efficient Vehicle Routing using Massive Trajectory Data," Distinguished Lecture, Hong Kong Baptist University, Hong Kong, April 10, 2018.
14. "Data-Intensive Paradigms for Vehicle Routing," Joint Seminar, The Hong Kong University of Science & Technology, Department of Computer Science and Engineering and Big Data Institute, Hong Kong, April 9, 2018.
15. "Big Data in Transport" (in Danish), Logistikkens Dag, Aalborg, Denmark, December 6, 2016.
16. "Recent Advances in Local Search," Seventh International Workshop with Mentors on Databases, Web and Information Management for Young Researchers, Nara, Japan, August 4, 2015.

#### Additional Talks

The list does not include presentations of tutorials and research papers at conferences and workshops.

1. "New Paradigms for Vehicle Routing," DiCyPS Conference, November 9, 2020. (online)
2. "Vehicle Routing Using Massive Trajectory Data," Qatar Computing Research Institute, Doha, Qatar, November 21, 2018.
3. "Data-Intensive Routing," Future Mobility 2017, Aalborg, Denmark, March 3, 2017.
4. "Keyword-Based Querying of Geo-Textual Data: Functionality and Concepts," Ludwig-Maximilians-Universität at München, Munich, Germany, December 9, 2016.
5. "Big Data—The New Black?" (in Danish), Djøf, Aalborg, Denmark, October 25, 2016.
6. "Big Data: We know everything about everybody—what can it be used for?" (in Danish), Obel Family Foundation Inspiration Day, Aalborg, Denmark, October 1, 2015.
7. "Data-Intensive Routing in Spatial Networks," Osaka University, Osaka, Japan, August 3, 2015.
8. "Keyword-Based Querying of Spatial Web Content," Beihang University, Beijing, China, July 17, 2015.
9. "Extracting Value from Big Data—The Case of Vehicular Traffic Data," Data Science and the Fourth Paradigm: Data-Intensive Scientific Discovery, Aalborg University, June 22, 2015.
10. "A to B Reloaded," Joint Daisy and Uber Symposium on Scalable Services for Big Transport Data, Aalborg, Denmark, April 24, 2015.
11. "Future Intelligent Transportation Systems" (in Danish: Fremtidens intelligente transportsystemer), Meeting of the Research and Technology Committee of the Danish Social Democrats, Aalborg, Denmark, April 22, 2015.

#### Panelist

1. Data Management and Analysis, Dagstuhl Seminar 22021: Mobility Data Science, Schloss Dagstuhl, Wadern, Germany, January 11, 2022. (virtual)
2. VLDB 2021 Round Table: Spatio-temporal Data System, 47th International Conference on Very Large Data Bases, Copenhagen, Denmark, August 18, 2021. (virtual)
3. Analytics with Big Data on Web: Is there any AI?, 20th International Conference on Web Information Systems Engineering, Hong Kong, China, January 20, 2020.
4. Round table forum, Global AI Forum, Chengdu, China, July 30, 2019.
5. MDM @ 20: Where We Have Been, Where Are We Now and Where Are We Heading?, 20th IEEE International Conference on Mobile Database Management, Hong Kong, China, June 12, 2019.
6. Ph.D. Forum Panel: Ph.D. Student's Job Hunting—Complementary Perspectives from both Employers and Young Researchers, 20th IEEE International Conference on Mobile Database Management, Hong Kong, China, June 10, 2019.
7. Future Mobility, DiCyPS visionsdag 2019: Future Mobility, Aalborg, May 23, 2019.
8. AI in transportation: Deployments, implications and trends, TASMU-QCAI Artificial Intelligence in Transportation Workshop, Doha, Qatar, November 22, 2018.
9. Future Directions for Indoor Information Systems: A Panel Discussion, Nineteenth IEEE International Conference on Mobile Data Management, Aalborg, Denmark, June 28, 2018.
10. When DB Meets AI, Twentysecond International Conference on Database Systems for Advanced Applications, Suzhou, China, March 29, 2017.
11. Future Mobility, Future Mobility 2017, Aalborg, Denmark, March 3, 2017.
12. Mobility and Big Data: adding an M to the Vs, or not?, Sixteenth IEEE International Conference on Mobile Data Management, Pittsburgh, PA, June 17, 2015.

Tutorials1. Presenter of a 3-part tutorial on Keyword-Based Querying of Geo-Textual Data and Data-Intensive Routing in Spatial Networks at the 15th Estonian Summer School on Computer and System Science, Tallinn, Estonia, August 21–25, 2016.

2. Presenter, with G. Cong, of a 90-minute tutorial titled Querying Geo-Textual Data—Spatial Keyword Queries and Beyond at the 2016 ACM SIGMOD International Conference on the Management of Data, San Francisco, CA, USA, June 26–July 1, 2016.

3. Presenter of a one-day course on Advanced Routing in Spatial Networks Using Big Data at the 2015 Summer Research Camp, Sha Shixuan International Research Center for Large Data Analysis and Management, Renmin University of China, Beijing, China, July 2015.

Ongoing and Completed Ph.D. Supervision:

1. Zhichen Lai, June 15, 2022 to present, AAU. Topic: Lightweight deep learning. (co-supervisors: Dalin Zhang and Huan Li)

2. Hao Miao, November 1, 2021 to present, AAU. Topic: Federated spatio-temporal representation learning. (co-supervisors: Chenjuan Guo and Yan Zhang)

3. Yunyao Cheng, July 1, 2021 to present, AAU. Topic: Interpretable multivariate time series forecasting. (cosupervisor; main supervisor: Chenjuan Guo)

4. Simon Aagaard Pedersen, September 2017 to April 2022. Topic: Advanced vehicle routing, AAU.

5. Tianyi Li, October 2018 to January 2022. Topic: Spatial trajectory data management: compression and clustering, AAU.

6. Tobias Skovgaard Jepsen, September 2017 to November 2021. Topic: Data-efficient mobility analytics in spatial networks, AAU.

7. Tung Kieu Tu Thanh, February 2017 to May 2021. Topic: Time series outlier detection and clustering using deep autoencoders, AAU.

8. Robert Waury, February 2016 to November 2019, AAU. Topic: Trajectory indexing for on-the-fly travel-time estimation.

9. Jilin Hu, October 2015 to February 2019, AAU. Topic: Management and analysis of traffic data.

10. Ilkcan Keles, October 2014 to May 2018, AAU. Topic: Ranking and evaluation of ranking in spatial keyword querying. 11. Yu Ma, March 2012 to October 2015, AU. Topic: Time-dependent, uncertain edge weights and stochastic routing in road networks.

Visiting and External Ph.D. Students Supervised:

1. Minbo Ma, Southwest Jiaotong University, China

2. Matej Antol, Masaryk University, Czech Republic

3. Bezaye Tesfaye, University of Salzburg, Austria (external supervisor)

4. Willi Mann, University of Salzburg, Austria (external supervisor)

5. Lei Chen, Hong Kong Baptist University, Hong Kong

M.S. Theses Supervised (Enrolled at Aalborg University unless noted otherwise):

1. Christoffer Hansen. Graduation: June 2022.

2. Fredrik de Frene. Graduation: June 2022.

3. Simon Park Kærgaard. Graduation: June 2022.

4. Anton Hinsby Palmer. Graduation: June 2022.

5. Sujeepan Srikandarajah. Graduation: June 2022.

6. Andreas Laugård Hald. Graduation: June 2021.

7. Christian Galaz Nielsen. Graduation: June 2021.

8. Alexandr Dyachenko. Graduation: June 2021.

9. Dominik Tabak. Graduation: June 2021.

10. Haris Husetic. Graduation: June 2021.

11. Kenneth Kristensen. Graduation: June 2021.

12. Rune Bak Jacobsen. Graduation: June 2021.

13. Søren Andreas Abildskov Hansen. Graduation: June 2021.

Courses taught:

Fall 2022, Specialization Course in Database Systems, graduate (w. T. B. Pedersen and K. Torp)

Spring 2022, Big Data Systems, undergraduate (w. T. B. Pedersen and S. Saltenis)

Fall 2021, Specialization Course in Database Systems, graduate (w. several project supervisors)

Spring 2021, Big Data Systems, undergraduate (w. T. B. Pedersen and D. Zhang)

Fall 2020, Database Systems, undergraduate (w. K. Hose and G. Montoya)

Fall 2020, Specialization Course in Database Systems, graduate (w. several project supervisors)

Spring 2020, Database Systems, undergraduate (w. K. Hose and G. Montoya)

Spring 2019, Database Systems, undergraduate (w. K. Hose)

Projects advised:

Fall 2022, Regulatory Compliance in Database Management

Fall 2022, Injury Prediction and Avoidance in Soccer (w. T. D. Nielsen)

Fall 2021, Vaccinating for the Support of Regulatory Compliance

Fall 2021, Mind Reading and Control: Deep Learning for Brain-computer Interface (w. D. Zhang)

Fall 2020, Drug Discovery: Framework for querying drug candidates based on similarity (w. J. Hu)

Fall 2020, Estimating Fuel Consumption and Emissions based on Traffic Simulations (w. K. Torp)

Evaluation Activities—Ph.D. Degrees

1. Ph.D. committee member, Ph.D. thesis defense of Tobias Rupp (supervisor: Stefan Funke), Universität Stuttgart, Germany, Fall 2022

2. External evaluator, Martin Schæler's Habilitation, Paris Lodron University Salzburg, Austria, Fall 2022
3. Ph.D. committee member, Ph.D. thesis defense of Yvonne Mülle (supervisor: Michael H. Böhlen), University of Zurich, Zurich, Switzerland, December 2020
4. Opponent, Ph.D. thesis defense of Priit Järvi (supervisor: Tanel Tammet), Tallinn University of Technology, Tallinn, Estonia, March 2020
5. External evaluation committee member, Ph.D. thesis defense of Klaus Arthur Schmid (supervisor: Matthias Renz), Ludwig-Maximilians-Universität München, Munich, Germany, December 2016
6. External examiner, Ph.D. examination of Shuyao Qi (supervisor: Nikos Mamoulis), The University of Hong Kong, Hong Kong, China, September 2016

Other Evaluation Activities  
 Censor, Database Management, Department of Information and communication technology, University of Agder, Norway, December 2018, December 2021  
 Member, evaluation committee, evaluation of bachelor programs in data engineering and information technology, Oslo Metropolitan University, Oslo, Norway, September 2018–February 2019

**The text below covers teaching from approximately 2016 and back.** It was formatted nicely when I entered it.

Ph.D. supervision (in progress or completed): Robert Waury, February 2016 to present, Jilin Hu, October 2015 to present (co-supervised by Bin Yang), Johannes Borresen, August 2015 to present (co-supervised by Kristian Torp), Ilkcan Keles, October 2014 to present (co-supervised by Simonas Saltenis), Yu Ma, March 2012 to October 2015, AU (6 months leave due to internship at Facebook), Qiang Qu, October 2011 to September 2014, AU, Laura Radaelli, August 2011 to July 2014, AU, Anders Skovsgaard, August 2011 to July 2014, AU, Manohar Kaul, August 2011 to July 2014, AU, Vaida Ceikute, September 2010 to September 2013, AU, Darius Sidlauskas, August 2008 to June 2012, Morten Goodwin, September 2008 to August 2011 (co-supervised by Mikael Snaprud, University of Agder), Carmen Ruiz Vicente, January 2008 to August 2011, Dingming Wu, August 2008 to June 2011, Kostas Tzoumas, September 2007 to June 2011 (6 months of leave due to internships at Microsoft Research), Dalia Tiesyte, January 2006 to November 2009, Maria Magdalena Ruxanda, September 2005 to January 2009, Stardas Pakalnis, August 2004 to April 2007, Agne Brilingaite, August 2003 to August 2006, Huang Xuegang, August 2003 to August 2006, Laurynas Speicys, August 2002 to August 2007, Anders Friis-Christensen, June 2000 to October 2003, Simonas Saltenis, August 1998 to September 2001, Giedrius Slivinskas, August 1998 to September 2001, Janne Skyt Winter, June 1998 to September 2001, Dieter Pfoser, August 1997 to September 2000, Torben Bach Pedersen, Heidi Gregersen, February 1996 to May 1999, Kristian Torp, August 1995 to October 1998.

Visiting and External Ph.D. Students Supervised (in progress or completed): Jinpeng Chen, Beihang University, Beijing, China, 2014/2015, Saad Aljubayrin, The University of Melbourne, Melbourne, Australia, February-May 2015, Jian Dai, Institute of Software, Chinese Academy of Science, Beijing, China, November 2014 to March 2015, Rami Al-Salman, University of Bremen, Bremen, Germany (formal co-supervisor), Anton Dignos, University of Zurich, Zurich, Switzerland (formal second advisor), Francesco Lettich, University of Venice, Italy, March to June 2013, Lars Dannecker, TU Dresden, Germany (formally second supervisor), Shuo Shang, University of Queensland, Australia, Xiaohui Li, National University of Singapore, Singapore, Xin Cao, Nanyang Technological University, Singapore, Bin Yang, Fudan University, China, Hoyoung Jeung, University of Queensland, Australia, October-November 2007, October-November 2008, Nikolay A. Shestakov, Tomsk Polytechnic University, Russia, October-November 2007, April-June 2008, Dan Lin, National University of Singapore, Singapore, Rosanne Price, Monash University, Australia, M.S. Theses Supervised: Frederik Mogensen. Graduation: August 2013. AUCasper Wandahl Schmidt. Graduation: January 2013. AUMads Vering Krarup. Graduation: April 2011. AUMartin Møller Larsen. Graduation: June 2008, Anders Skovsgaard. Graduation: June 2008, Lars Tabro Sørensen. Graduation: June 2008, Per Bech Jensen. Graduation: June 2006, Kovarththan Rajaratnam. Graduation: June 2006, Kim Schulz. Graduation: June 2006, Dalia Tiesyte. Graduation: June 2005, Nerius Tradisauskas. Graduation: June 2005, Yan Zhao. Graduation: June 2004, Vedran Alkalfic. Graduation: June 2004, Jasmin Catovic. Graduation: June 2004, Michael Cheng. Graduation: July 2003, Rasmus Klitgaard Nielsen. Graduation: July 2003, Kristian V. B. Andersen. Graduation: July 2003, Nora Zokaite. Graduation: June 2003, Agne Brilingaite. Graduation: June 2003, Stardas Pakalnis. Graduation: June 2003, Jovita Nenotaite. Graduation: June 2003, Alminas Civilis. Graduation: June 2003, Irina Aleksandrova. Graduation: June 2002, Augustas Kligys. Graduation: June 2002, Jan Kolar. Graduation: June 2002, Laurynas Speicys. Graduation: June 2002, Igor Timko. Graduation: June 2002, Fernando Lobato Miguelez. Graduation: June 2002, Jose Antonio Iglesias Martinez. Graduation: June 2002, Javier Romero Hernando. Graduation: June 2002, Rasa Bliujute. Graduation: June 1998, Simonas Saltenis. Graduation: June 1998, Giedrius Slivinskas. Graduation: June 1998, Bent Dalsten Sørensen. Graduation: June 1997, Michael Frstrup Hermansen. Graduation: June 1997, Michael Engesgaard. Graduation: June 1996, Jacob Høgh Jensen. Graduation: June 1996, Thomas Larsen. Graduation: June 1996, Jeannette Brendborg (with R. Johnson and N. Martin, Birkbeck College, London University). Graduation: June 1994, Jesper Fischmann. Graduation: June 1994, Carsten Ø. Madsen. Graduation: June 1994, Henrik Buch Pedersen. Graduation: June 1994, Nils-Erik Mose Pedersen. Graduation: June 1994, Kristian Torp (with Dr. L. Mark, College of Computing, Georgia Institute of Technology). Graduation: June 1994, Visiting M.S. Theses Supervised: Matteo Brucato, University of Bologna. February-June 2013, Matthieu Songy, French Naval Academy. August-November 2008, Severin Jonglez, French Naval Academy. August-November 2008, Martin Redoutey, French Naval Academy, October-December 2007, Eric Scotty, French Naval Academy, October-December 2007, Sara Degani, (with Carlo Combi, University of Verona), Fall 2006 and Spring 2007.

Courses Taught and Projects Supervised: Courses taught: Spring 2013 (Q3), Data Management for Moving Objects, graduate, AU, Fall 2012 (Q2), Database Management Systems, graduate, AU, Fall 2012 (Q1), Databases, undergraduate, AU, Spring 2012 (Q3), Data Management for Moving Objects, graduate, AU, Fall 2011 (Q2), Database Management Systems, graduate, AU, Fall 2011 (Q1), Databases, undergraduate, AU, Spring 2011 (Q3), Data Management for Moving Objects, graduate, AU, Fall 2010 (Q1), Databases, undergraduate, AU, Fall 2007, Advanced Topics in Database Management, graduate, Spring 2007, Data Management for Mobile Objects, Ph.D. level (with Simonas Saltenis), Fall 2005, Advanced Topics in Database Management, graduate (with Torben B. Pedersen, Kristian Torp, and Albrecht Schmidt), Fall 2004, Advanced Topics in Database and Programming Systems, graduate (with Albrecht Schmidt, Per Madsen, Simonas Saltenis, Lone Leth

Thomsen, Janne Skyt, Kristian Torp, and Bent Thomsen) Fall 2003, Advanced Topics in Database and Programming Systems, graduate (with Torben B. Pedersen, Kristian Torp, and Bent Thomsen) Fall 2002, Advanced Topics in Database Management, graduate (with Torben B. Pedersen and Michael H. Boehlen) Fall 2001, Advanced Topics in Database and Programming Systems, graduate (with Torben B. Pedersen and Kurt Noermark) Fall 1997, Database Systems, undergraduate Fall 1997, Trends in Database Management, graduate (with Kristian Torp) Spring 1997, Computer Science, undergraduate Fall 1996, Data Warehousing, graduate Fall 1995, Database Systems, undergraduate Fall 1995, Temporal Database Systems, graduate Spring 1995, Advanced Database Systems, graduate Spring 1994, Advanced Database Systems, graduate Fall 1993, Database Systems, undergraduate Spring 1993, Advanced Database Systems, graduate (with Lars Bækgaard) Fall 1992, Database Systems, undergraduate Fall 1991, Database Systems, undergraduate Projects in computer science supervised (not including M.S. projects): Fall 2007, graduate, 3 students Fall 2006, graduate, 1 student Fall 2005, undergraduate, 1 student Fall 2005, graduate, 3 students Fall 2004, graduate, 2 students Spring 2004, graduate, 2 students Fall 2003, graduate, 3 students Spring 2003, graduate, 3 students Spring 2003, graduate, 2 students Spring 2003, graduate, 3 students Fall 2002, graduate, 2 students Fall 2002, graduate, 2 students Fall 2002, graduate, 2 students Spring 2002, graduate, 2 students Spring 2002, graduate, 2 students Spring 2002, graduate, 1 student Fall 2001, graduate, 3 students Spring 2001, graduate Spring 2001, graduate Spring 2001, graduate Fall 1997, graduate, 3 students Spring 1997, graduate, 2 students Spring 1997, graduate, 3 students Spring 1997, graduate, 2 students Spring 1997, undergraduate, 7 students Spring 1997, undergraduate, 7 students Spring 1997, undergraduate, 5 students Fall 1996, graduate, 2 students Fall 1996, undergraduate, 6 students Fall 1996, undergraduate, 7 students Fall 1996, undergraduate, 7 students Spring 1996, graduate, 2 students Fall 1995, graduate, 3 students Spring 1995, undergraduate, 3 students Spring 1995, graduate, 3 students Spring 1994, graduate, 2 students Spring 1994, graduate, 1 student Fall 1993, graduate, 4 students Fall 1993, graduate, 1 student Fall 1993, graduate, 1 student Fall 1993, undergraduate, 4 students Fall 1993, undergraduate, 5 students Spring 1993, graduate, 1 student Spring 1993, graduate, 1 student Spring 1993, graduate, 4 students Spring 1993, graduate, 1 student Spring 1993, graduate, 2 students Spring 1993, graduate, 1 student Fall 1992, undergraduate, 5 students Fall 1992, undergraduate, 4 students Fall 1992, undergraduate, 4 students Fall 1991, undergraduate, 5 students Teaching Assistance: Programming (Fall 1986, Fall 1987) Systems Development (Spring 1987) Linear Algebra and Differential Equations (Spring 1985, Spring 1986) Mathematical Analysis (Fall 1984) Courses and Tutorials Targeting Ph.D. Students and Peers: Presenter of a one-day course on Advanced Routing in Spatial Networks Using Big Data at the 2015 Summer Research Camp, Sha Shixuan International Research Center for Large Data Analysis and Management, Renmin University of China, Beijing, China, July 2015. Presenter, with L. Liu and X. Xie, of a week-long course on Mobile Computing and LBS at the 2014 VLDB Summer School, Beijing, China, July 2014. Presenter of a three-day Ph.D. course on Data Management for Outdoor and Indoor Location-Based Services, Aalborg University, February 27-March 1, 2013. Presenter of a one-day course on Moving Object Data Management at the 2012 Summer Research Camp, Sha Shixuan International Research Center for Large Data Analysis and Management, Renmin University of China, Beijing, China, July 2012. Presenter of a half-day tutorial on Data Management for Location-Based Services at the Fourteenth German Database Conference, Kaiserslautern, Germany, February 28-March 4, 2011. Presenter of a one-day course on Data Management for Mobile Services at the 2007 Winter School of the Australian Research Council Research Network, Enterprise Information Infrastructure, University of Queensland, Brisbane, Australia, July 2007. Presenter of a half-day tutorial at the Second Meeting of the Norfa Wireless Information Management Network, Aalborg, Denmark, December 2001. Presenter of a half-day tutorial on Temporal Databases at the Twelfth Brazilian Symposium on Databases, Fortaleza, Brazil, October 1997. Presenter, with R. Snodgrass, of a half-day tutorial on Temporal Databases at the Twelfth International Conference on Data Engineering, New Orleans, Louisiana, February/March 1996. Presenter, with R. Snodgrass, of a half-day tutorial on Temporal Databases at the Twentyfirst International Conference on Very Large Data Bases, Zurich, Switzerland, September 1995. Presenter of a half-day tutorial on Temporal Databases at Database Workshop, Aarhus, Denmark, June, 1995. Additional Teaching Activities, External to Aalborg University: Teaching Mobile Data Management, Agder University, Grimstad, Norway, Fall 2006, Fall 2007, Fall 2009, and Fall 2010 Teaching Database Management Systems, Agder University College, Grimstad, Norway, Spring 2006, 2007, 2008, and 2010 Teaching Data Warehousing and Temporal Data Management, Agder University College, Grimstad, Norway, on nine occasions, Fall 2001 to Fall 2010 Teaching Advanced Temporal and Multidimensional Data Modeling, Hagstova Føroya, Faeroe Islands, November 12-14, 2002 Teaching Data Warehousing (with T. B. Pedersen), Noulhauz, Aalborg, October 18-19, 2001 Teaching and organizing Modern Database Technologies (with M. Bohlen, L. Bækgaard, and M. Jensen), Efteruddannelsescenteret for datamatikerlærere, Vejle, April 27-29, 1998 Teaching Database Systems - Quality and Performance (with L. Mark), Metodica, Copenhagen, June 12-13, 1997 Teaching CSc 460/560, Database Systems (with S. Manchanda), University of Arizona, Department of Computer Science, Fall 1994 Teaching Database Design for Computer Professionals (with L. Bækgaard), Metodica, Aalborg, May 9-10, 1994 Co-supervising one Ph.D. student, University of Arizona, Department of Computer Science, 1992 Teaching Database Administration (with L. Mark), University of Maryland, University College, October 11-November 7, 1990 Selected Lectures Targeting Ph.D. students and Peers (out of more than 150 lectures): Keyword-Based Querying of Geo-Tagged Web Content, Fifth International Conference on Model & Data Engineering, Rhodes, Greece, September 26-28, 2015. Keyword-Based Querying of Geo-Spatial Data, Web Intelligence Summer School, Saint-Etienne, France, August 31-September 4, 2015. Querying of Geo-Textual Web Content: Concepts and Techniques, Third IEEE International Workshop on Human Mobility Computing and Privacy and Third IEEE International Workshop on Mobile Data Management, Mining, and Computing on Social Networks, Pittsburgh, PA, USA, June~15, 2015. Keyword-Based Spatial Web Querying - Where We Are and Where We Are Going, Sixteenth Asia-Pacific Web Conference, Changsha, China, September 5-7, 2014. Topics in Geo-Spatial Data Management: Spatial Keyword Querying and Beyond, German DB Meeting, Boblingen, Germany, December 5-6, 2013. Spatial Keyword Querying of Geo-Tagged Web Content, Seventh International Workshop on Ranking in Databases, Riva del Garda, Italy, August 30, 2013. Querying the Web with Local Intent, Fourteenth International Conference on Mobile Data Management, Milan, Italy, June 3-6, 2013. The Spatial Web—A New Data

Management Frontier, Tirtyfirst International Conference on Conceptual Modeling, Florence, Italy, October 15-18, 2012. Data Management on the Spatial Web, Thirtyeighth International Conference on Very Large Databases, Istanbul, Turkey, August 27-31, 2012. On the Roles of Spatio-Temporal Data in Web Search, International Workshop on Spatio-Temporal Data Integration and Retrieval, Washington D.C., USA, April 1, 2012. Spatial Web Querying, 10 Years of Computer Science, Faculty of Computer Science, Free University of Bozen-Bolzano, Italy, December 2, 2011. On the Querying for Places on the Mobile Web, Thirteenth Asia-Pacific Web Conference, Beijing, China, April 18-20, 2011. Elements of a Spatial Web, Eleventh International Conference on Web Information Systems Engineering, Hong Kong, China, December 12-14, 2010. The Great Indoors: A Data Management Frontier, Second Workshop on Research Directions in Situational-Aware Self-Managed Proactive Computing in Wireless Ad Hoc Networks, Kansas City, MO, USA, May 23, 2010. Data Management Infrastructure for the Mobile Web, Fifth International Conference on Semantics, Knowledge and Grid, Zhuhai, China, October 12-14, 2009. Location, Location, Location," Tenth International Conference on Mobile Data Management, Taipei, Taiwan, May 18-20, 2009. When the Internet Hits the Road, Twelfth German Database Conference, Aachen, Germany, March 5-9, 2007. How Would You Like to Aggregate Your Temporal Data?, Thirteenth International Symposium on Temporal Representation and Reasoning, Budapest, Hungary, June 15--17, 2006. Geo-Enabled Mobile Services - A Tale of Routes, Detours, and Dead Ends, Eleventh International Conference on Database Systems for Advanced Applications, Singapore, April 12--15, 2006. Data Management for Mobile Services - Location Tracking and Geo-Content Modeling," Sixth ACM/IFIP/ USENIX International Middleware Conference, Grenoble, France, December 1, 2005. Towards Knowing, Always and Everywhere, Where Everything Is, Precisely, Danish Map Days, Kolding, Denmark, November 17, 2005. Towards Knowing, Always and Everywhere, Where Everything Is, Precisely, Fourth International Workshop on Web and Wireless Geographic Information Systems, Goyang, South Korea, November 26, 2004. Data Management for Mobile Services in the Real World, Eighth International Symposium on Spatial and Temporal Databases, Santorini, Greece, July 26, 2003. Location-Enabled Services - A Data Management Perspective, The Nordic GIS Conference: GI - Communication and Perspective, Aalborg, Denmark, November 25, 2002. Research Challenges in Location-Enabled M-Services, Third International Conference on Mobile Data Management, Singapore, January 8-11, 2002. Location-Based Services - A Database Perspective, Eighth Scandinavian Research Conference on Geographical Information Science, Ås, Norway, June 25-27, 2001. Mobile E-Services and Their Challenges to Data Warehousing, 9. Fachtagung, Datenbanksysteme in Büro, Technik und Wissenschaft, Oldenburg, Germany, March 6, 2001. Indexing of On-Line Moving Objects and Other M-Challenges, Korean Database Conference, Daejeon, South Korea, May 12, 2000. Additional Invited Lectures - Conferences and Distinguished Speaker Series: Recent Advances in Local Search, 7th International Workshop with Mentors on Databases, Web and Information Management for Young Researchers, Nara, Japan, August 4, 2015. Big Data in Transportation - Progress and Challenges, The First Workshop of Advanced Institute of Data Analytics, East Normal University, Shanghai, China, August~30, 2014. Search for Content on the Mobile Web, (in Danish), Computerworld Mobile Wave Conference, Copenhagen, June 3, 2014. Keyword-Based Spatial Web Querying, 25th Anniversary Distinguished Lecture Series, Department of Computer Science, Hong Kong Baptist University, Hong Kong, April 24, 2014. Querying the Web With Local Intent, DIKU Talk, University of Copenhagen, Copenhagen, March 13, 2014. Advances in Spatio-Temporal Data Management: User-Generated Data and Geo-Textual Services, InfinIT, Copenhagen, January 15, 2014. Data Management for Location-Based Services," 2012 KAIST ICC Global Lecture Series, KAIST, Daejeon, Korea, August 7-9, 2012. Managing High-Velocity Mobile Location Data, Workshop on Big Data Analysis and Management, Beijing, China, July 19, 2012. On Supporting Location in Web Querying, Department of Informatics, University of Zurich, Zurich, Switzerland, May 3, 2012. World wide web -- nu med en geografisk dimension," Royal Danish Academy of Sciences and Letters, Copenhagen, February 16, 2012. New Directions in Spatial Web Querying, Seventh International Conference on Semantics, Knowledge and Grid, Beijing, China, October 24--26, 2011. Theme talk. Tracking and Querying Continuously Moving Objects, Symposium on Biodiversity in the Silicon Age, Royal Danish Academy of Sciences and Letters, Copenhagen, Denmark, May 18, 2011. Enabling Geo-Location in Mobile Services, Danish Society for Computer Science, Copenhagen, Denmark, February 24, 2011. The Other 87 Percent - Data Management for Indoor Mobile Services, Hong Kong Polytechnic University, Hong Kong, December 16, 2010. Enabling a Spatial Web, Renmin University, Beijing, China, December 10, 2010. Geo-Spatial Context for Mobile Services, Tsinghua University, Beijing, China, December 9, 2010. Geo-Spatial Context Awareness for User-Generated Mobile Services, Department of Computer Science and Engineering, University of Minnesota, MN, USA, April 13, 2009. Data Management for Location-Based Services," New England Database Society, Brandeis University, MA, USA, March 27, 2009. Privacy for Spatial Queries and Data," Stanford InfoSeminar 2009, Stanford, CA, USA, March 6, 2009. Evaluation-Related Activities: Member of the national Danish corps of censors in Computer Science, April 1998-March 2010 Member of the corps of evaluators, Frodskaparsetur Føroya (Faeroe Islands), 1991—2013 I have evaluated a substantial number of courses and projects at the graduate and undergraduate levels at Aalborg University as well as at other Danish universities and on the Faroe Islands. International Ph.D. level evaluation: Co-examiner, Ph.D. thesis defense of Rami Al-Salman (main supervisor: Christian Freksa), University of Bremen, Bremen, Germany, November 2014 Co-examiner, Ph.D. thesis defense of Lars Dannecker (main supervisor: Wolfgang Lehner), Technical University of Dresden, Dresden, Germany, November 2014 Co-examiner, Ph.D. thesis defense of Anton Dignos (main supervisor: Michael H.~Bohlen), University of Zurich, Zurich, Switzerland, August 2014 Co-examiner, Ph.D. thesis defense of Martin Kaufmann (advisor: Donald Kossmann), ETH Zurich, Zurich, Switzerland, May 2014 First opponent for Joao Batista da Rocha Junior's Ph.D. defense (advisor: Kjetil Nørsvåg), Norwegian University of Science and Technology, Department of Computer and Information Science, January 2012 Member of the Ph.D. committee for Gabriele Pozzani (advisor: Carlo Combi), University of Verona, Italy, May 2011 External examiner on the Ph.D. thesis committee for Juozas Gordevicius (advisor: Johann Gamper), Free University of Bozen-Bolzano, Italy, January 2011 Member of the Ph.D. committee for Victor Teixeira de Almeida (advisor: Ralf Hartmut Gueting), University of Hagen, Germany, October 2009 Member of the Ph.D. committee for Ira Assent (advisor: Thomas Seidl), RWTH Aachen, Germany, March 2008 Member of the thesis committee for Bugra Gedik's Ph.D. study (advisor: Ling Liu), Georgia institute of Technology, College of Computing, April 2006 Chair of the

thesis committee for Aleksandra Tesanovic's Ph.D. study (advisor: Jorgen Hansson), Linköping University, Department of Computer and Information Science, March 2006  
Member of the Ph.D. jury of Carme Escofet Martin, Department of Software, Technical University of Catalonia, Spain, June 2005  
Member of the graduation committee of Nirvana Meratnia, Department of Computer Science, Faculty of Electrical Engineering, Mathematics and Computer Science, University of Twente, Netherlands, February 2005  
First opponent for Erlend Tøssebro's Ph.D. defense (advisor: Mads Nygård), Norwegian University of Science and Technology, Department of Computer and Information Science, 2002  
External opponent for Henrik Andre-Jonsson's Ph.D. examination (advisor: Nahid Shahmehri), Linköping University, Department of Computer and Information Science, 2002  
External examiner (with Sophie Cluet, INRIA, France) for Marlon Dumas' Ph.D. examination (advisors: Marie-Christine Fauvet and Pierre-Claude Scholl), Computer Engineering Laboratory, IMAG Institute, University of Grenoble, June 2000  
External opponent for Ling Lin's Ph.D. examination (advisor: Tore Risch), Linköping University, Department of Computer and Information Science, 1999  
External examiner for Thomas Zurek's Ph.D. examination (advisor: Peter Thanisch), University of Edinburgh, Department of Computer Science, 1997

## **2. Study administration: A list of any study administration tasks, e.g. study board membership, head of studies or semester or course coordinator, accreditation, etc.**

From January 2017 to November 2018, I was Ph.D. Study Director in the Technical Faculty of IT and Design.  
From January 2017 to November 2018, I represented Aalborg University in Universities Denmark's Working Group on Researcher Training.

In 2015 and 2016, I was part of a five-person working group charged with the task of proposing revisions of the University's Doctoral School of Engineering and Science in response to an international evaluation. As a notable result, the programs, into which the more than 500 Ph.D. students were enrolled, were consolidated.

I was chairman of the board of the International Doctoral School of Technology and Science from January 2007 to January 2009, when a ministerial order mandating a different organization was implemented. More than 400 Ph.D. students were enrolled.

I was director of the Ph.D. program Computer Science and Engineering from August 2000 to January 2007. This Ph.D. program was part of the University's International Doctoral School of Technology and Science, and all Ph.D. students in Department of Computer Science are enrolled into this program. As part of this appointment, I served on all evaluation committees for applications for Ph.D. stipends within Department of Computer Science.

## **3. University pedagogy qualifications: A list of any completed courses in university pedagogy, PBL courses, workshops, academic development projects, collegial guidance and supervision, etc.**

Over the years, I have attended a number of activities related to teaching in general and PBL in particular.

In 2022, I served as pedagogical supervisor of tenure-track Assistant Professor Yan Zhao. A paper was submitted to a pedagogical conference based on her activities, and she was nominated for an award.

## **4. Other qualifications: Conference attendance, editorials, presentations, etc. relating to education, 'University Teaching Day', etc.**

Member of the Science Education Committee, a committee under the Danish Academy of Technical Sciences' Think Tank, April 2003-April 2004. The committee prepared the following report:

Bohm, M., E. Bonnerup, C. Elberling, C. S. Jensen, C. P. Knudsen, L. Leffland, H. H. Lund, N. Olsen, L. Pallesen, K. Sørensen, "Det begynder i skolen - En ATV-rapport om naturfagenes vilkår og fremtidige udviklingsmuligheder i grundskolen," Danish Academy of Technical Sciences, 81 pages, April 2004.

## **5. Teaching activity development and teaching materials: A list of any contributions to the development of new modules, teaching materials, study programmes, e-learning, collaboration with external business partners, etc.**

I have developed or further developed the courses listed earlier in item 1 and have prepared project proposals for numerous projects supervised (see also the listings in item 1).

I have co-authored a textbook for which a comprehensive set of slides is available:

Jensen, C. S., T. B. Pedersen, and C. Thomsen, Multidimensional Databases and Data Warehousing, Morgan & Claypool Publishers, 2010, 111 pages.

I have co-developed a teaching case and an accompanying note:

Damsgaard, J., J. Hørluck, and C. S. Jensen, IT-Driven Customer Service or Customer-Driven IT Service: Does IT Matter?, teaching case, 24 pages, January 2005. European Case Clearing House reference number: 905-002-1.

Damsgaard, J., J. Hørluck, and C.S. Jensen, IT-Driven Customer Service or Customer-Driven IT Service: Does IT Matter?, teaching note, 8 pages, January 2005. European Case Clearing House reference number: 905-002-8.

## **6. Teaching awards you may have received or been nominated for.**

N.A.

## **7. Personal reflections and initiatives: Here you may state any personal deliberations as regards teaching and supervision, any wishes and plans for further pedagogic development, plans for following up on feedback/evaluations from students, etc.**

### **Teaching Statement:**

Teaching is arguably the main business of a university; teaching offers important justification for the existence of university research; and teaching is possibly the main avenue of impact of the research conducted at a university.

### **Teaching Background**

I started teaching some forty years ago, as a private tutor for high-school students who needed extra help with their math and physics. From 1984 to 1987, I was a teaching assistant on courses on a variety of subjects, including mathematical analysis, linear algebra and differential equations, programming, and system's development.

Since the beginning of the nineties, I have taught a variety of university courses at undergraduate and graduate levels, I have given tutorials and talks aimed at fellow researchers, and I have given courses and talks for small and large industrial audiences.

I have also advised quite a few projects, including undergraduate projects, graduate projects, M.S. thesis projects, and Ph.D. projects.

Specifically, I am or have been an adviser for more than 50 internal and external/visiting Ph.D. students. Next, more than 60 M.S. students have graduated under my supervision. Of these, about a dozen chose to pursue the Ph.D. degree.

### **Teaching Approach and Directions**

I strive to be an effective communicator of ideas and principles, but also of professional values (including the entrepreneurial values I spoke of in my research statement). As part of this, I find it important to try to be in touch with and to know my audience, including its expectations and motivation, when I lecture. As another part, I try to encourage students to develop independent and critical thinking and to challenge conventional wisdom. The worst that can happen is that a system emerges where students are lulled into being irresponsible entities that must constantly be monitored and controlled, and that are motivated only by exams. Advanced students and students doing project work, I try to encourage them to challenge "the professor's views." This is important if we are to educate the best engineers and scientists.

I believe in learning by doing. Insight may be obtained by reading and remembering the content of a textbook, but such insight is often perceived as being abstract, and is short-lived if not tied to concrete experiences. In contrast to insight, skills are obtained by doing, not simply by reading. The activity of gaining of insight and the "doing" from which skills stem must go hand in hand. Consequently, exercises and project work are essential elements in computer science education, and they must go hand in hand with elements such as the participation in lectures and the reading of textbooks and scientific papers.

A colleague of mine likes to tell his students that the most important part of the course they are about to take is not the classroom sessions, but the exercises. This slightly provocative statement makes the point, although classroom sessions are of course also important.

The development of generic, or subject-independent, and personal skills is another focus. For example, technical communication skills, verbal as well as oral, are important for the students. These skills are generally applicable, and they will be in increasing demand in tomorrow's workplace, which will be more and more interdisciplinary and intercultural.

An approach that I have found effective in developing these skills is to subject the students to project work conducted in small teams. This setting is likely to mirror key aspects of the future employment situations of the students. Independent teamwork promotes ownership and the entrepreneurial spirit, and it develops inter-personal skills that enable the students to work effectively together with their fellow students at solving larger problems. The writing of project reports aids in the development of verbal communication skills, and the presentation of project outcomes enhances the oral presentation skills of the students.

Finally, it is my experience that tying together teaching and research when it comes to advanced students is beneficial to both the students and the research. This may be done by inviting the students to take part in the general research environment. For example, the students may take part in research seminars, and they may work on projects that relate to the research going on in the department's research projects. This enables the students to get a taste for research, and it can lead to significant results. For example, some of my best M.S. students performed research with me that led to papers at quite selective journals and conferences such as IEEE TKDE, VLDB, ICDE, DASFAA, and SSDBM. It can also be a great source of recruitment for the department's Ph.D. program. Indeed, this is the case for the Ph.D. program at Aalborg University, and some of my own best Ph.D. students were recruited this way.

## **8. Any other information or comments.**

I am sad that much of the text in item 1 appears as one long line. I formatted it nicely, but then it seems that the system at some point decided to drop all line breaks.