

## Curriculum Vitae

**Aila Särkkä**

### Personal Data

Address: Mathematical Sciences  
Chalmers University of Technology and University of Gothenburg  
SE-412 96 Gothenburg  
Sweden

email: aila@chalmers.se

Phone: 46 (0) 31 772 3542

Birth: December 20, 1962, Pirkkala, Finland

Sex: Female

Nationality: Finnish

Languages: Finnish, English, Swedish

### Positions

Present Position 1/4/2012 - : Professor (Swedish: Biträdande professor until 31/10 2015 and Professor from 1/11/2015 on) at Chalmers, Mathematical Sciences

1/9/2012-30/6/2013: Visiting scholar at the University of Washington, Dept. of Statistics (on sabbatical)

1/6/1999-31/3/2012: Associate Professor (Swedish: Docent) at Chalmers, Mathematical Sciences

1/9/1999-31/8/2000: Visiting Assistant Professor at Emory University, Dept. of Biostatistics

1/1/1998-31/5/1999: University Lecturer at Chalmers, Mathematical Sciences

1/11/1996-30/4/1997: Postdoc at University of Western Australia, Dept. of Mathematics

1/8/1995-31/12/1997: Research associate (Swedish: forskarassistent) at the University of Gothenburg, Dept. of Statistics

1/2/1994-31/7/1995: Postdoc at INRA, Avignon, France, Laboratory of Biometry

**Leave of absence**

10/8/2023-15/03/2024: Sick leave 75%

1/1/2003-30/6/2003: Maternity leave 80%

1/9/2000-31/7/2001 and 19/4/2002-31/12/2002: Maternity leave 100%

**Degrees**

Docent: Mathematical Statistics, Chalmers University of Technology, 1999.

Docent: Statistics, University of Gothenburg, 1997.

Ph.D.: Statistics, Jyväskylä University, 1994.

Dissertation Title: Pseudo-likelihood Approach for Pair  
Potential Estimation of Gibbs Processes

Thesis Advisor: Antti Penttinen

Ph.Lic.: Applied mathematics, Jyväskylä University, 1989.

B.Sc. (Swedish: magister): Mathematics, Jyväskylä University, 1988  
(including teacher education).

**Fellowships**

1994: Academy of Finland  
Postdoctoral Fellowship

1995: INRA, Avignon, France  
Postdoctoral Fellowship

1996: University of Western Australia  
Postdoctoral Fellowship

**Research Interests**

My research areas are spatial statistics and spatio-temporal modeling, especially spatial and spatio-temporal point processes. A lot of my earlier research was on parameter estimation of Gibbs point processes and construction of new models. Currently, I am interested in point patterns, especially in materials science and neurology, with complex marks or observed with errors.

**Teaching**

- Undergraduate courses: Courses on calculus, problem sessions on probability theory and mathematical statistics (University of Jyväskylä); Course on mathematical statistics, course on probability theory, and basic courses in statistics and probability theory (University of Gothenburg and Chalmers)
- Master level courses: A special course on geometry (University of Jyväskylä); Statistical computing (Emory University); Statistical consulting, Design of experiments, and Spatial statistics and image analysis (University of Gothenburg and Chalmers), Statistical inference (University of Gothenburg and Chalmers)
- Ph.D. courses: Markov random fields (University of Gothenburg); Spatial statistics (University of Gothenburg and Chalmers); Computer intensive methods for zoologists (University of Gothenburg)
- Pedagogical education: Chalmers diploma of higher education (15 credits); Diversity and inclusion for learning in higher education; Chalmers "handledarforum"; Chalmers "Coachande handledarskap"

**Completed Doctoral Student (main advisor)**

- 2004 Sharon Kühlmann-Berenzon, Chalmers University of Technology
- 2008 Viktor Olsbo, Chalmers University of Technology
- 2011 Ottmar Cronie, Chalmers University of Technology
- 2013 Magnus Röding, Chalmers University of Technology
- 2017 Henrike Häbel, Chalmers University of Technology
- 2018 Claes Andersson, Chalmers University of Technology (main advisor)
- 2019 Marco Longfils, Chalmers University of Technology
- 2024 Konstantinos Konstantinou, Chalmers University of Technology

**Doctoral Students (not completed)**

I am currently co-advisor for Julia Jansson, who is expected to present her Ph.D. thesis in 2027, and for Ruben Seyer, who is expected to present his Ph.D. thesis in 2028.

## **Bachelor and Master Thesis Supervision**

2008– 12 Bachelor’s theses and 17 Master’s theses

## **Postdocs**

Claudia Lautensack (May-October, 2007)

Mari Myllymäki (August-September, 2010)

Tuomas Rajala (January 2014-December 2015)

Philip Townsend (November 2018-October 2020)

Sandra Barman (April 2023-2025)

## **Special Evaluation Tasks**

Faculty opponent for one Ph.D. thesis in Sweden and one in Finland.

Faculty referee for one licentiate thesis in Sweden and two in Finland.

Second reviewer, external reviewer or committee member for two Ph.D. theses in UK, three in Germany, three in Denmark, one in Norway, one in Spain, two in Australia, and one in France.

Member of the evaluation committee of 20 Ph.D. theses in Sweden.

Faculty referee for a Habilitation thesis in Probability and Mathematical Statistics in Czech Republic.

Outside expert for five senior lectureships (Swedish: lektorat) and two ”docent” promotions in mathematical statistics, one professorship in mathematical statistics applied to forest sciences and one in forest inventory and sampling, one professorship, two promotions to professor, one to ”biträdande” professor, and one ”docent” promotion in statistics, one associate senior lectureship (Swedish: biträdande lektorat) and one senior lectureship in health sciences statistics in Sweden. In addition, one associate professorship and one professorship in statistics in Denmark, two associate professorships (Norwegian: førsteamanuensis) in statistics in Norway, one tenure-track position of assistant professor in statistics, one promotion to a senior lecturer in statistics, and one promotion to full professor in statistics in Finland.

In the evaluation committee for SSF Future Research leaders (Framtidens Forskningsledare) 8 (FFL8), 2021, and 9 (FFL9), 2024.

Referee for a proposal for the Marsden Fund, New Zealand, and for a proposal for the Swiss National Science Foundation.

In the committee to evaluate the Master’s program in Mathematical statistics (main) and Bachelor’s and Master’s program in Mathematics (co-) at Lund University, 2023.

Regular referee for papers for statistics and forestry journals.

## Organizational Work

Member of the scientific program committee at the 30th Nordic conference in mathematical statistics, Helsinki, Finland, 2026.

Co-organizer of the 15th SSIAB (Spatial Statistics and Image Analysis in Biology) workshop, Chalmers and University of Gothenburg, Smögen, Sweden, 2025.

Member of the local organizing committee and an invited session organizer at the 29th Nordic conference in mathematical statistics, Gothenburg, Sweden, 2023.

Invited session organizer at the European meeting of statisticians, Warsaw, Poland, 2023.

Member of the program committee and an invited session organizer at the 2022 IMS International Conference on Statistics and Data Science (ICSIDS), Florence, Italy, 2022.

Session co-organizer (with Radu Stoica) at the 21st annual conference of the International Association for Mathematical Geosciences, Nancy, France, 2022.

Invited session organizer at the 28th Nordic conference in mathematical statistics, Tromsø, Norway, 2021.

Member of the program committee of the 30th International Biometric Conference, Seoul, Korea, 2020.

Invited session organizer at the European meeting of statisticians, Palermo, Italy, 2019.

Member of the program committee of the Nordic-Baltic Biometric conference (NBBC19), Vilnius, Lithuania, 2019.

Co-organizer of the 9th Smögen workshop, Smögen, Sweden, 2018

Member of the program committee of the 27th Nordic Conference on Mathematical Statistics, Tartu, Estonia, 2018.

Member of the local organizing committee and an invited session organizer of the 40th Conference on Stochastic Processes and Their Applications (SPA 2018), Gothenburg, Sweden, 2018

Co-organizer of the Smögen workshop “New challenges in spatial and spatio-temporal modeling”, Smögen, Sweden, 2014

Invited session organizer at the 11th European Congress of Stereology and Image Analysis, Kaiserslautern, Germany, 2013.

Member of the program committee of the 24th Nordic Conference on Mathematical Statistics, Umeå, Sweden, 2012.

Co-organizer of the initiative seminar “Scientific models”, Chalmers, Sweden, 2010

Co-organizer of the Smögen workshop “Spatial and Spatio-temporal Models in Science, Engineering, and Medicine” Smögen, Sweden, 2010

Invited session organizer at the 23rd Nordic Conference on Mathematical Statistics, Voss, Norway, 2010

Co-organizer of the Smögen workshop “Random Modelling in Science, Engineering and Medicine”, Smögen, Sweden, 2008

Invited session organizer at a Bernoulli Society satellite meeting of ISI’2007, Porto, Portugal, 2007

Member of the program committee of “Sonja Kovalevsky-dagarna”, Gothenburg, Sweden, 2006 and 2007

Co-organizer of the Smögen workshop “Spatial and Spatio-temporal Modelling in Biology, Ecology and Geosciences”, Smögen, Sweden, 2006.

Co-organizer of the Smögen workshop “Spatial statistics, image analysis and signal processing within bioscience and technology”, Smögen, Sweden, 2004.

Co-organizer of the session Spatial point processes at the ENAR meeting, Charlotte, North Carolina, USA, 2001.

Co-organizer of the workshop “Image Analysis and Spatial Statistics”, Chalmers, Sweden, 1999.

Organizer for the workshop “Spatial Statistics and GIS”, University of Gothenburg, Sweden, 1997.

### **Editorial Work**

Associate Editor (July 2012–2018) for Scandinavian Journal of Statistics

In the editorial board of Spatial Statistics (March 2015–present)

Associate Editor (April 2023–present) for the Journal of the Royal Statistical Society: Series C (Applied statistics)

Editor in chief (1 of 3) of the Scandinavian journal of Statistics for the period January 2025–December 2027

### **Research grants**

1999: NFR grant for the project Spatial statistics (main applicant), 600,000 SEK.

2002: Co-applicant for the SSF grant (ramanslag) for the project Spatial statistics and image analysis for environment and health (main applicant Ulla Holst, Lund University), 9,000,000 SEK total.

2003: VR grant for the project Statistical models for the influence of trees on the abundance of understory vegetation species in boreal forests (main applicant), 200,000 SEK.

2005: Coapplicant for the SSF grant for Gothenburg Mathematical Modelling Center (main applicant Holger Rootzen, Chalmers), 22,000,000 SEK total.

2006: VR grant for the project Development of spatio-temporal models for tree growth (main applicant), 1,950,000 SEK.

2013: VR grant for the project Spatial statistical methods for detecting small fiber neuropathies (main applicant), 4,660,000 SEK.

2014: SSF grant (Swedish: rambidrag) for the project Material structures seen through microscopes and statistics (main applicant), 21,000,000 SEK

2018: VR grant for the project Extracting information from complicated point patterns (main applicant), 3,200,000 SEK.

2018: Co-applicant for the VINNOVA project CoSiMa - concept for industrial development for the sustainable soft materials of the future (main applicant Tobias Gebäck, Chalmers), 10,000,000 SEK.

2021: Co-applicant for the VINNOVA project CoSiMa - concept for digitalized development of the sustainable soft materials of the future (main applicant Tobias Gebäck, Chalmers), 10,000,000 SEK.

2025: Co-applicant for the VINNOVA project CoSiMa - AI fr digital utveckling av mjuka material (main applicant Tobias Gebäck, Chalmers), 11,992,000 SEK.

2025: VR grant for the project Stochastic modelling of interacting shapes: from sweat droplets to tree canopies (main applicant), 4,000,000 SEK.

### **Local academic boards and administration**

Deputy member of the department board (Swedish: Institutionsrådet), Mathematical sciences, Chalmers and the University of Gothenburg, 2001–2004, ordinary member 2005–2008, and deputy member (as the deputy head of the department), 2009–2011 and 2013–2023.

Member of the central hiring committee, Chalmers, 2005–2008

Member of the faculty senate (Swedish: Fakultetsrådet), Chalmers, 2008–2011 and 2023–present.

Deputy head (Swedish: proprefekt) of the department of Mathematical Sciences, Chalmers and the University of Gothenburg, 2009–2011 and 2013–2023.

Member of the management group of the division of Mathematical statistics, 2011–2012 and 2013–2014.

Member of the management group of the Chalmers SuMo Biomaterials VINN EXCELLENCE centre, 2013–2015.

Head of the division Applied Mathematics and Statistics at the department of Mathematical Sciences, Chalmers and the University of Gothenburg, 2025–

### **Utilization**

Head of the Center for Applied Mathematics and Statistics (University of Gothenburg and Chalmers) 1/4 2005 - 31/3 2008. The main task of the center was to offer mathematical and statistical consulting for researchers in other fields both in academia and in the industry.

Member of the Chalmers utilization network (Swedish: institutionernas nyttiggörandenätverk), 2016 - 2018.

Moderator at the panel discussion in connection with the inauguration of the exhibition of Women in Mathematics, 4 April, 2019.

Chalmers impact award 2020 for a project led by Tobias Gebäck.

### **Awards**

Supervisor of the Year 2016/2017 at Chalmers

Elected member of the Royal Society of Arts and Sciences in Gothenburg, 2017

Elected Member of the International Statistical Institute (ISI), 2018.

### **Invited lectures at summer and winter schools**

2014: Series of four lectures at the 14th Annual Winter School in eScience with the theme Big data challenges to modern statistics, Geilo, Norway

2014: Lecture and practical session on spatial point processes at the summer school Spatio-Temporal Statistics organized by Pan-American Advanced Study Institute, Búzios, RJ, Brazil

### **Invited conference talks**

1995: IUFRO XX world congress, Tampere, Finland

1996: The French-Danish Workshop on Spatial statistics and image analysis in biology, Garchy, France

1998: The French-Danish Workshop on Spatial statistics and image analysis in biology, Sandbjerg, Denmark

1999: SEMSTAT (Séminaire Européen de Statistique Complex Stochastic Systems) meeting, Eindhoven, The Netherlands

1999: The 52nd Session of the International Statistical Institute, Helsinki, Finland (invited discussant)

2000: EURANDOM Workshop on Stochastic Geometry and Spatial Statistics, Eindhoven, The Netherlands

2000: 18th Nordic Conference on Mathematical Statistics (unable to participate)

2003: Symposium: Surveillance and other topics in medical statistics, Gothenburg, Sweden

- 2006: Miniworkshop on spatial statistics and stochastic geometry, Jyväskylä, Finland
- 2006: The French-Danish Workshop on Spatial Statistics and Image Analysis in Biology, Skagen, Denmark
- 2007: Stochastic geometry, spatial statistics and their applications, Schloss Reisensburg, Günzburg, Germany
- 2007: The First Nordic-Baltic Biometric Conference, Research Centre Foulum, Denmark
- 2007: Uncovering Hidden Patterns - A Symposium in Honour of Mats Rudemo, Chalmers, Sweden
- 2007: Probability and Statistics in Science and Technology, a Bernoulli satellite meeting of ISI'2007, Porto Portugal
- 2008: The French-Danish Workshop on Spatial Statistics and Image Analysis in Biology, Toulouse, France
- 2009: The 57th Session of the International Statistical Institute, Durban, South Africa (invited discussant)
- 2010: The French-Danish Workshop on Spatial Statistics and Image Analysis in Biology, Copenhagen, Denmark
- 2010: The 23rd Nordic Conference on Mathematical Statistics, Voss, Norway
- 2010: Symposium in honour of Bo Ranneby, Swedish University of Agricultural Sciences, Umeå, Sweden
- 2012: The French-Danish Workshop on Spatial Statistics and Image Analysis in Biology, Avignon, France
- 2012: Recent advances in spatial and spatio-temporal stochastic modelling, Lund University, Sweden
- 2012: University of Miami Spatial Statistics conference 2012, Miami, Florida, USA
- 2013: Nordic Baltic Biometric conference, Stockholm, Sweden (plenary speaker)
- 2013: Symposium in honour of Adrian Baddeley, Aarhus, Denmark
- 2014: The French-Danish Workshop on Spatial Statistics and Image Analysis in Biology, Aalborg, Denmark
- 2014: The 25th Nordic Conference on Mathematical Statistics, Turku, Finland
- 2015: Annual meeting for FMS (Föreningen för medicinsk statistik), Stockholm, Sweden

- 2016: The 27th Nordic Congress of Mathematicians, Stockholm, Sweden
- 2016: The French-Danish Workshop on Spatial Statistics and Image Analysis in Biology, Rennes, France
- 2016: The 10th Tartu Conference of Multivariate Statistics, Tartu, Estonia
- 2016: Smögen workshop on Spatial and spatio-temporal models, hierarchical modeling and model selection with a focus on the analysis of large and complicated data structures, Smögen, Sweden
- 2016: From nano to macrostructures - design and characterisation of soft materials, Strömstad, Sweden (keynote speaker)
- 2017 Forskning och forskare i skogens utkant, Göteborg, Sweden
- 2017 Soft Microscopy workshop, Göteborg, Sweden
- 2017: Spatial Statistics 2017: One World: One Health, Lancaster, UK (keynote speaker)
- 2017: Challenges in the statistical modeling of stochastic processes for the natural sciences, Banff International Research Station (in honor of Peter Guttorp), Canada
- 2017: 125th IUFRO Anniversary Congress - Cross-boundary modelling in a changing world, Freiburg, Germany
- 2018: Workshop on Can Stochastic geometry handle dynamics of risk management? Lund, Sweden.
- 2018: The French-Danish Workshop on Spatial Statistics and Image Analysis in Biology, Aalborg, Denmark.
- 2019: SuMo-Treeseearch workshop: What are the next steps to achieve sustainable bio-based materials? Gothenburg, Sweden.
- 2019 Point processes in space, time and beyond, Skagen, Denmark.
- 2019 SuMo workshop, Gothenburg, Sweden.
- 2020 3D Tree Models For Forest Dynamics (3DFDYN), Helsinki, Finland (keynote speaker).
- 2022: The French-Danish Workshop on Spatial Statistics and Image Analysis in Biology, satellite seminar organized by the Finnish Society of Biostatistics, Helsinki, Finland.
- 2022: 10th International Workshop on Spatio-temporal modelling, Lleida, Spain.
- 2023: The French-Danish Workshop on Spatial Statistics and Image Analysis in Biology, Grenoble, France (unable to participate).

2023: Euromech Colloquium 632 "Data-driven modeling of porous, composite and polycrystalline microstructures for predicting their mechanical and transport properties", Ulm, Germany (unable to participate).

2023: French Geostatistical Days, Fontainebleau, France (unable to participate).

### **Invited talks on Ph.D. supervision**

2019: Conference on teaching and learning (KUL), Chalmers, Gothenburg, Sweden.

2019-2025: Course "Supervising research students" (ten times), Chalmers, Gothenburg, Sweden.

2020: Cramér Society's Autumn meeting.

### **Contributed conference talks**

1990: 13th Nordic conference on mathematical statistics, Odense, Denmark

1992: 14th Nordic conference on mathematical statistics, Røros, Norway

1993: IUFRO conference Stochastic spatial models in forestry, Thessaloniki, Greece

1993: The 5th symposium on biometrical problems in agricultural, forestry and animal investigations, Garpenberg, Sweden

1994: 15th Nordic conference on mathematical statistics, Lund, Sweden

1995: 21st European meeting of statisticians, Aarhus, Denmark

1996: 16th Nordic conference on mathematical statistics, Lahti Finland

1998: Spatial and computational statistics workshop, Aussois, France

1998: 17th Nordic conference on mathematical statistics, Elsinore, Denmark

1998: 22nd European meeting of statisticians, Vilnius, Lithuania

1999: Image analysis and spatial statistics, Gothenburg, Sweden

1999: 2nd Workshop on Spatial and Computational Statistics, Crete, Greece

2001: ENAR meeting, Charlotte, North Carolina, USA (session organizer and speaker).

2004: Spatial point process modelling and its applications, Castellón, Spain.

2005: Workshop: Spatial Statistics and Image Analysis for Environment and Medicine, Lund, Sweden

2006: Internatinal workshop on spatio-temporal modelling (METMA3), Pamplona, Spain

2007: Workshop: Stochastic Geometry, Spatial Statistics and their Applications, Reisenburg, Germany

2007: The first Nordic-Baltic Biometric Conference,

2012: The 24th Nordic Conference on Mathematical Statistics, Umeå, Sweden

### **Seminars (outside my own department)**

1990: Bergakademie Freiberg, Germany

1996: Department of Statistics, University of Jyväskylä, Finland

1997: Department of Mathematics, University of Western Australia

1998: Department of Mathematical Statistics, Lund University

1998: Department of Mathematics, University of Jena, Germany

1999: Department of Statistics, Rice University, USA

1999: Department of Biostatistics, Emory University, Atlanta, USA

2001: Department of Statistics and Modelling Science, University of Strathclyde, U.K

2002: Astra Zeneca, Göteborg

2005: Fraunhofer ITWM, Kaiserslautern, Germany

2005: Department of Mathematical statistics, Stockholm University

2007: Centre of Biostochastics, Swedish University of Agricultural Sciences, Umeå

2009: Department of Mathematics and Statistics, University of Jyväskylä, Finland

2009: Department of Mathematics, University of Oslo, Norway

2011: Department of Mathematics, University of Kaiserslautern, Germany

2011: Department of Statistics, Lund University

2013: Department of Statistics, University of Washington, Seattle, USA

2013: Laboratory of William R. Kennedy, Department of Neurology, University of Minnesota Medical School, Minneapolis, USA

2013: Department of Mathematical Sciences, NTNU, Norway

2013: Department of Mathematics, Linköping University

2013: Department of Mathematics and Mathematical Statistics, Umeå University

- 2014: Department of Mathematics, University of Kaiserslautern, Germany
- 2014: Department of Mathematics and Statistics, University of Cyprus
- 2016: Department of Mathematics, Aarhus University, Denmark
- 2017: School of Mathematics and Statistics, University of St Andrews, UK
- 2017: Department of Economics and Statistics, Linnaeus University
- 2020: Online Seminar on Spatial and Spatio-temporal Point processes and Beyond (OSSP)
- 2021: Online Seminar, Department of Mathematics, University of Kaiserslautern, Germany
- 2021: Online Seminar, Department of Mathematics and Statistics, Umeå University
- 2022: School of Business and Economics, Humboldt University, Berlin, Germany
- 2022: Natural Resources Institute Finland, Helsinki, Finland
- 2023: Online seminar, Hillert Modeling Laboratory, KTH Royal Institute of Technology
- 2024: Department of Mathematics, Université de Lorraine, Nancy, France
- 2025: Department of statistics, Lund University School of Economics and Management
- 2025: Department of Forest Resource Management, Swedish University of Agricultural Sciences, Umeå