

CURRICULUM VITAE for Aasa Feragen

PERSONAL INFORMATION

Full name: Aasa Feragen
Date of birth: August 29 1981
Home address: På Bjerget 14, 1 tv, 2400 København NV
Email address: aasa@diku.dk
Webpage: <http://image.diku.dk/aasa>
Nationality: Norwegian

CURRENT AND PAST POSITIONS

July 2012 - present

Post Doc in the Machine Learning and Computational Biology Research Group at the Max Planck institute for Developmental Biology and Max Planck Institute for Intelligent Systems, Tübingen, Germany.

January 2012 - present

Freja Fellow and Assistant Professor in the Image Group at the Department of Computer Science, University of Copenhagen (tenure track)

September 2009 - January 2012

Post doc in the Image Group at the Department of Computer Science, University of Copenhagen.

EDUCATION

2010 PhD in mathematics from the University of Helsinki.

Thesis: *Topological stability through tame retractions*.

2006 Licentiate of Philosophy in mathematics from the University of Helsinki.

2005 Masters' degree in mathematics from the University of Helsinki.

GRANTS AND FELLOWSHIPS

2012 2-year postdoctoral fellowship from the Danish Council for Independent Research | Technology and Production Sciences: *Robust Geometric Graph Kernels for Bioimaging Applications*

2012 FREJA fellowship: 2-year post doc fellowship from the Faculty of Science, University of Copenhagen, in a tenure track position.

2012 Cowriter, International Network Programme grant from the Council of Scientific Research and Innovation: *Workshop on Statistics and Geometry: Manifolds and Stratified Spaces*

2011 DIKU 2-year postdoctoral fellowship

2009 Lundbeck Foundation post doc project grant: *Shape classification and quantification in medical image analysis using the Riemannian geometry of spaces of tree-structured shapes*

2008 Oskar Öflund Foundation: Grant for organizing the 3rd Nordic EWM summer school (in collaboration with Camilla Hollanti from the University of Turku).

2008 Otto A. Malm Foundation: Another grant for organizing the 3rd Nordic EWM summer school (in collaboration with Camilla Hollanti from the University of Turku).

2008 Magnus Ehrnrooth Foundation: PhD grant.

2007 Magnus Ehrnrooth Foundation: PhD grant.

2006 Magnus Ehrnrooth Foundation: PhD grant.

2005 Helsinki University Science Foundation: Young Researcher PhD grant.

DISSEMINATION

I have (co-)authored **3 journal papers** and **9 refereed conference papers**; **2 journal papers** and **2 extended abstracts** are under review and **3 papers** in preparation. See list of publications for details.

Invited Talks

Research collaboration workshop on Shape

Institute for Pure and Applied Mathematics, UC Los Angeles, July 2013.

Airway tree-shape analysis

Brigham and Women's Hospital, Harvard Medical School, Boston, 30.5.2011.

Statistics on geometric trees

Mathematical Biosciences Institute (MBI) workshop on *Statistics, geometry, and combinatorics on stratified spaces arising from biological problems*, Ohio State University, 21-25.5.2012.

Statistical analysis of geometric trees

Summer School on Graphs in Computer Graphics, Image and Signal Analysis, 15.7.2011.

Statistics on tree-structured data: Modeling treelike shapes in image analysis

Geometry seminar, Leeds University, 30.03.2011.

International visits and collaborations

Brigham and Women's Hospital, Harvard Medical School, May 29-30 2012

Visited in order to give a talk and discuss possibilities for collaboration.

Martinos Center for Biomedical Imaging, Harvard Medical School, May 29 2012

Visited in order to give a talk and discuss possibilities for collaboration.

Max Planck Institute, Tübingen, March 2 - April 13 2012

Visited Prof. Karsten Borgwardt and his group to start a collaboration.

Max Planck Institute, Tübingen, November 22 2011

Visited Prof. Karsten Borgwardt and his group to discuss a collaboration.

Århus University, September 8-14 2011

Visited Dr. A. du Plessis to write a paper.

University of North Carolina at Chapel Hill, October 16-22 2011

Visited Prof. Steve Marron in order to initiate collaboration on statistics on trees.

Drexel University, October 11-15 2010

Visited Prof. A. Shokoufandeh in order to work on a specific problem in my research.

Århus University, June 28-30 2010

Visited Dr. A. du Plessis for research collaboration.

University of Oslo, December 8-12 2008

Visited Prof. Hans Brodersen with Dr. A. A. du Plessis for collaboration.

University of Oslo, October 1-5 2007

Visited Prof. Hans Brodersen with Dr. A. A. du Plessis for collaboration.

Århus University, Department of Mathematical Sciences, September 2006-August 2009

Guest PhD student working together with Dr. A. A. du Plessis.

Conference Contributions

I have given 14 talks and presented 6 posters at conferences and workshops in mathematics and computer science. In addition, I have given numerous seminar presentations at the Harvard University, University of North Carolina, Aarhus University, University of Oslo, University of Helsinki etc.

PROFESSIONAL SERVICE

Reviewer for conferences: ECCV, MICCAI, CAIP, IPMI, VISAPP; **journals:** Statistics and computing.

Conference/summer school organizer:

Statistics and Geometry in Bioimaging: Manifolds and Stratified Spaces

Sandbjerg, Denmark, fall 2012.

Summer school on Sparsity in Image and Signal Analysis

Holar, Iceland, fall 2010.

3rd European Women in Mathematics Summer school for PhD students in Mathematics

Turku, Finland, summer 2009.

Singularities in Århus, international workshop on singularity theory of varieties and mappings

Århus, Denmark, summer 2009.

Mentor activity: Foreningen Nydanskernes erhvervsmentorkorps (mentoring immigrants to Denmark looking for academic jobs)

MANAGEMENT EXPERIENCE

Board member of choirs and student organizations

UAK 2010-2012, Chorus Sanctae Ceciliae 2004-2006, Spektrum rf 2004.

Social event organizer in various organizations

UAK tour committee 2012, 2010, Århus studiekor tour organizer 2010, Spektrum rf Social Program

Chair 2004, Spektrum rf Annual Dinner Organizer 2004, Spektrum rf 70th anniversary coordinator 2003.

Tutor for incoming students

Helsinki University, 2002-2003.

LIST OF PUBLICATIONS for Aasa Feragen

Journal publications

- A. Feragen, *Topological stability through extremely tame retractions*, Topology and its Applications, Volume 159, Issue 2, 2012, 457-465.
- A. Feragen, *Topological stability through tame retractions*, Annales Academiæ Scientarum Fennicæ, Mathematica, Dissertationes 154, 2009, PhD thesis, 117pp.
- A. Feragen, *Equivariant embedding of metrizable G-spaces in linear G-spaces*, Proc. AMS 136 (2008), 2985-2995.

Refereed conference publications

- A. Feragen, *Complexity of computing distances between geometric trees*, 11pp, International Workshop on Structural and Syntactical Pattern Recognition, 2012.
- A. Feragen, J. Petersen, M. Owen, P. Lo, L. Hohwü, M.M.W. Wille, A. Dirksen, M. de Bruijne, *A hierarchical scheme for geodesic anatomical labeling of airway trees*, Medical Image Computing and Computer Assisted Intervention (MICCAI) 2012, 8 pp.
- C. Chen, L.E.B.L. Sørensen, F.B. Lauze, C. Igel, M. Loog, A. Feragen, M. de Bruijne, M. Nielsen, *Towards Exaggerated Emphysema Stereotypes*, SPIE Medical Imaging 2012.
- Aasa Feragen, Søren Hauberg, Mads Nielsen, François Lauze, *Means in spaces of treelike shapes*, International Conference of Computer Vision (ICCV) 2011.
- A. Feragen, P. Lo, V. Gorbunova, M. Nielsen, A. Dirksen, J. Reinhardt, F. Lauze, M. de Bruijne, *An airway tree-shape model for geodesic airway branch labeling*, Mathematical Foundations of Computational Anatomy, workshop at Medical Image Computing and Computer Assisted Intervention (MICCAI) 2011, 12 pp.
- C. Chen, F. Lauze, C. Igel, A. Feragen, M. Loog, M. Nielsen, *Towards Exaggerated Image Stereotypes*, Asian Conference on Pattern Recognition, 2011, 5 pp.
- A. Feragen, F. Lauze, P. Lo, M. De Bruijne, M. Nielsen, *Geometries on spaces of treelike shapes*, Asian Conference on Computer Vision (ACCV), 2010, Lecture Notes in Computer Science, 2011, Volume 6493/2011, 160-173.
- A. Feragen, F. Lauze, M. Nielsen, *Fundamental geodesic deformations in spaces of treelike shapes*, International Conference on Pattern Recognition (ICPR) 2010, 5pp.
- A. Feragen, *An equivariant Tietze extension theorem for proper actions of locally compact groups*, Proceedings of the 13th General EWM Meeting, 2007, 125-131.

Submitted

- A. Feragen, P. Lo, M. de Bruijne, M. Nielsen, F. Lauze, *Towards a theory of statistical tree-shape analysis*, submitted to journal 2012, 14 pp.
- A. Feragen, A.A. du Plessis, *The structure of groups of multigerms*, submitted to journal, 2012. Preprint: <http://arxiv.org/abs/1110.1981>.

Theses

- A. Feragen, *Characterization of equivariant ANEs*, Licentiate thesis, 2006.
- A. Feragen, *A topological manifold is homotopy equivalent to some CW complex*, Masters' thesis, 2005.

Technical reports and preprints

- A. Feragen, *A short and elementary proof of Hanner's theorem*, 2011 (<http://arxiv.org/abs/1011.4145>).
- A. Feragen, M. Nielsen, S. Hauberg, P. Lo, M. de Bruijne and F. Lauze, *A geometric framework for statistics on trees*, technical report, 2011