Vedrana Andersen Dahl — Curriculum Vitae

Date of birth: 13th of February 1974. Place of birth: Zagreb, Croatia.
Citizenship: Croatian and Danish.
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Education

2007–2011	PhD, Informatics and Mathematical Modelling, Technical University of Denmark. Thesis: 3D Shape Modelling using High Level Descriptors.
2005–2007	MSc in Information Technology, IT University of Copenhagen. Thesis: Smoothing 3D meshes using Markov random fields.
1992–1999	University degree (corresponding to MSc) in Mathematics and Physics Education, Faculty of Science, University of Zagreb. Thesis: Theory of Retracts.

Employment

2018–	Associate professor, Statistics and Data Analysis (affiliated section for Visual Computing), DTU Compute, Technical University of Denmark.
2015–2017	Assistant professor, Statistics and Data Analysis, DTU Compute, Technical University of Denmark.
2014–2015	Postdoc, Statistics and Data Analysis, DTU Compute, Technical University of Denmark.
2011–2013	Research assistant, Data Analysis, DTU Informatics, Technical University of Denmark.
2007–2010	PhD student, Image Analysis and Computer Graphics, IMM, Technical University of Denmark.
1999–2002	Teacher of mathematics, Upper primary school Trnsko, Zagreb, Croatia.

Periods of leave

Jan 2001– Jan 2002	Maternity leave
Oct 2002 – Oct 2003	Maternity leave
Feb 2012 – Oct 2012	Maternity leave

Scientific focus areas

Methods for analysing large tomographic data with applications in materials science and medical research. Quantification of fibre structures, ranging from glass and carbon fibres used in composite materials to nerve fibres in the brain tissue. Geometric models for volumetric segmentation and tomographic reconstruction, in particular models utilizing deformable triangle and tetrahedral meshes or neural representation. Weekly supervised texture-based segmentation. Digitization and shape analysis of zoological specimens. Geometric texture analysis and synthesis. Methods for processing optical coherence tomography data.

International academic collaboration

· Prof. Joost Batenburg, Leiden University. Head of Imaging and Visualization. Collaboration on several research applications.
· Research scientist Alexandra Pacureanu, The European Synchrotron. Neuroimaging Unit. Collaborations involving imaging at ESRF.
· Prof. Yentl Swolfs, KU Leuven. Collaboration on research applications and co-supervision of projects.
· Prof. Pascal Fua, EPFL (École polytechnique fédérale de Lausanne). Head of the Computer Vision Laboratory. Co-supervision of a smaller project.
· Prof. Tim Salditt, Georg-August-Universität Göttingen. Head of the research group Structure of biomolecular assemblies and X-ray physics, operating GINIX endstation at DESY Synchrotron. Collaboration on research projects.
· Prof. Philip Withers, University of Manchester. Head of Henry Moseley X-ray Imaging Facility. Collaboration on several projects involving analysis of fibre composites. Since 2018.
· Prof Leif Asp, Chalmers, Director of Material Science Area of Advance. Collaboration on several projects.

· Senior lecturer Martin Bech, Lund University. Project manager at X-ray Phase Contrast research group. Collaboaration on various 3D imaging projects. Since 2015.
· Prof. Mathieu Desbrun, California Institute of Technology. Head of Applied Geometry Lab. Hosting visiting research stay at Caltech 2008–2009.

Hospital collaboration

· Glostrup hospital (later Rigshospitalet), Department of Ophthalmology. A large number of projects involvin analysis of retinal scans.
· Righospitalet, Department of radiology. A project on kidney microvasculature.
· Hvidovre hospital. Collaborations with Danish Research Centre for Magnetic Resonance.
· Skåne University Hospital. Several projects involving peripheral nerves.
· University Medical Center of the JohannesGutenberg-University Mainz, Germany. Collaboration involving effects of COVID-19 on heart tissue.)

Industry collaboration

· Tetra Pak. Ongoing collaboration since 2014 involving microstructure of packaging material.
· ROCKWOLL. Collaboration in connection with LINX project, on microstructure of stone wool.
· Novozymes. Collaboration in connection with LINX project, on microsturcture of cotton fabric.
· Grunfos. Collaboration in connection with LINX project, on microstructure of fibre-reinforced polymers.
· Novo Nordisk. Collaboration on effects of osteoporosis on microstructure of bone,

Participation in larger scientific projects

· SOLID, ESS lighthouse on hard materials in 3D, supported by the Danish Agency for Science and Higher Education, 2021(–ongoing). Participant.
· QIM, Center for Quantification of Imaging Data from MAX IV, supported by the Capital Region of Denmark, 2017(–ongoing). Participant.
· MAX4 Imagers, Collaboration between Capital Region hospitals and the synchrotron MAX IV. Supported by the grant from the Capital Region Research Foundation for Healthcare. 2017–2021. Participant
· MUMMERING, MUltiscale, Multimodal and Multidimensional imaging for EngineeRING, European Marie Sklodowska-Curie Innovation Training Network funded by HORIZON 2020, 2017–2021. Participant.
· CINEMA, allianCe for ImagiNg of Energy Materials, funded by The Danish Council for Strategic Research, 2014–2019. Participant.
· NEXIM, NEXt generation Imaging, funded by The Danish Council for Strategic Research, 2013–2016. Participant.

Management of larger scientific projects

· RELIANCE, REaL-tIme characterization of ANisotropic Carbon-based tEchnological fibres, films and composites, European Marie Sklodowska-Curie Doctoral Network funded by HORIZON Europe, 2023(–ongoing). Work package leader of WP3 Data analysis and validation.
· LINX, Linking Industry to Neutrons and X-rays, funded by Innovation Fund Denmark, 2017–2021. Participant and work package leader of WP7 Fiber structure and dynamics.

PhD supervision

· Sophia Elizabeth Bardenfleth, 2021–2024. 3D Image Segmentation. Co-supervisor.
· Patrick Møller Jensen, 2019–2022. Model-based quantitative 3D analysis. Main supervisor.
· Astrid Margareta Elisabet Engberg, 2016–2019. Quantification of Retinal Microvasculature. Main supervisor.
· Elise Otterlei Brenne, 2018–2021. Physical model priors for tomogram segmentation. Co-supervisor.
· Niels Jeppesen, 2017–2021. Image Analysis for Wind Turbine Blade Structures and Materials. Second co-supervisor.
· Ja-Keoung Koo, 2018–2021. Segmentation from projections. Main supervisor.
· Mariam Andersson, 2017–2020. Revealing brain nanostructure for better MRI biophysical model. Co-supervisor.
· Dolores Messer, 2016–2019. 3D Shape Analysis for Morphometric Evolutionary Modelling- based on 3D X-ray Tomography and Optical Scanning. Co-supervisor
· Anne-Sofie Wessel Lindberg, 2015–2018. 3D Optical Coherence Tomography for Retinopathy and Optic Neuropathy. Main supervisor.

· Monica Jane Emerson, 2014–2017. Image analysis and segmentation using sparse coding dictionaries. Second co-Supervisor, .
· Tuan Trung Nguyen, 2014–2017. Segmentation and Reconstruction of Multi-Phase Structures using the Deformable Simplicial Complex Method. Co-supervisor.

Teaching hightlights

· Regular DTU courses: Responsible teacher for several courses including Advanced Image Analysis (MSc level, taken by 120 students yearly), and Programming (BSc level, taken by 1500 students yearly). Previously responsible for Introduction to Programming and Data Processing (BSc level), Modelling and Programming (BSc level) and Computer Vision (MSc level).
· Cinemax PhD summer school on 3D imaging and modelling of materials. Since 2016.
· Introduction to Advanced Tomography. Online (COURSERA) course since 2019 .
· X-ray tomography for porosity analysis. PhD course 2019.
· Application of micro computed tomography for individual fibre segmentation in composites. PhD course 2018.
· Comparative study of unidirectional-and air texturized rovings in industrial profiles. PhD course 2018.
· Supervised more than 40 Bachelor projects and more than 20 Master projects.

Grants and stipends

· Villum synergy 2022 grant (3 mio kr) for project Real-time Acquisition and Neural Representatuion of Structural Properties - Renner. Together with Jens Wenzel Andreasen from DTU Energy.
· Villum experiment 2022 grant (2 mio kr) for project STUDIOS: Segmenting tomograms using different interpretation of simplicity. Single applicant.
· HORIZON Doctoral Network 2021 (3 mio Euro) for project RELIANCE, ReaL-time characterization of anisotropic carbon-based technological fibres, films and composites. One of co-applicants.
· Dynamic 4D camera system to improve treatment of children with facial abnormalities, supported by AP Møllerfond (1.7 mio kr). One of co-applicants.
· Support for two PhD students through MAX4ESSFUN project.
· Support for a Postdoc and PhD student through HALOS project.
· Full PhD project 3D Optical Coherence Tomography for Retinopathy and Optic Neuropathy supported by DTU and Glostrup Hospital strategic pool (1.4 mio kr). Co-applicant.
· Financial support for travels and external stay at Caltech by Knud Højgaards Fond (25.000 kr), Otto Mønsteds Fond (25.000 kr), Thomas B. Thriges Fond (25.000 kr), Fabrikant P.A. Fiskers Fond (15.000 kr), Oticon Fonden (13.000 kr), Reinholdt W. Jorck og Hustrus Fond (25.000 kr).
· Full PhD scholarship from Technical University of Denmark.

Organization

· Scandinavian conference on image analysis (SCIA) 2025, program chair.
· Scale Space and Variational Methods in Computer Vision conference (SSVM) 2021, program committee.
· Workshop on Computer Vision for Microscopy Image Analysis (MIA) in connection with Computer Vision and Pattern Recognition Conference (CPVPR), 2021, 2022 and 2023, program committee.

Invited talks and keynotes

· SOLID general assembly. Invited speaker. March 2023.
· The European synchrotron user meeting 2023. Invited speaker. February 2023.
· The European synchrotron user meeting 2022. Invited speaker. February 2022.
· The European synchrotron user meeting 2021. Invited speaker. February 2021.
· 15th International Congress for Stereology and Image Analysis. Invited speaker. May 2019.

Reviewing

· British machine vision conference (BMVC), 2020, 2021, 2022
· Microscopy and microanalysis, 2022.
· Applied soft computing, 2019.
· Composites Part A (Elsevier), 2020.
· Computer Vision and Pattern Recognition Conference (CVPR) conference, 2020, 2021, 2022.

· Information Science (Elsevier), 2021,
· Information Processing in Medical Imaging Conference (IPMI), 2021, 2023
· Journal of Mathematical Imaging and Vision (Springer), 2020.
· Machine Learning for Biomedical Imaging conference (MELBA), 2021.
· The Medical Image Computing and Computer Assisted Intervention conference (MICCAI) 2021, 2022
· Medical Imaging with Deep Learning conference (MIDL) 2022, 2023
· Northern Lights Deep Learning conference (NLDL) 2021
· SCIA 2019
· Scientific Reports 2022
· Springer Nature Applied Sciences (SNAS) 2022
· Scale Space and Variational Methods in Computer Vision conference(SSVM), 2019, 2021.
· IEEE Tansactions on Medical Imaging, 2021.

Other duties
· Head of PhD school at DTU Compute since 2024. Deputy since 2022
· Member of department PhD committee for DTU Compute, since 2021.
· Member of study board for Bachelor's and Master's Programme in Health and Informatics, University of Copenhagen, appointed by Technical University of Denmark, 2017-2022.
· Member of study board for Bachelor's Degree Programme in Radiography, University College Copenhagen. Appointed by DTU Compute, 2018-2022.
· Fellow of LINXS – Lund Institute of Advanced Neutron and X-ray science.
· Chariman for PhD assessment commitees for Alessandro Dal Corso(2018), Agnes Martine Nielsen (2019), Florian Gawrilowics (2020), Morten Hannemose (2020), Florian Stutz (2021), Mads Emil Brix Doest (2021), Kristoffer Vinther Olesen (2023).
· Member of PhD assessment committees for Hamid Behjat (Lund University, 2018), Jacob Daniel Kirstejn Hansen (University of Copenhagen, 2019), Amit Suveer (Uppsala University, 2019), Georgios Karagiannis (University of Copenhagen, 2020), Kasra Arnavaz (University of Copenhagen, 2022), Håkan Wieslander (Uppsala University, 2022), Junsheng Fu (Tampere University, 2022).

Most important recent publications are marked with star (⋆).

Journal articles

1. Vasileios K Oikonomou, Till Dreier, Alexandra Sandéhn, Mohsen Mohammadi, Jakob Lønborg Christensen, Klas Tybrandt, Anders Bjorholm Dahl, Vedrana Andersen Dahl, Martin Bech, and Eleni Stavrinidou. Elucidating the bulk morphology of cellulose-based conducting aerogels with x-ray microtomography. *Advanced Materials Technologies*, 8(23):2300550, 2023
2. Hans Martin Kjer, Mariam Andersson, Yi He, Alexandra Pacureanu, Alessandro Daducci, Marco Pizzolato, Tim Salditt, Anna-Lena Robisch, Marina Eckermann, Mareike Toepperwien, et al. Bridging the 3d geometrical organisation of white matter pathways across anatomical length scales and species. *bioRxiv*, pp. 2023–10, 2023
3. Lars P. Mikkelsen, Søren Fæster, and Vedrana A. Dahl. Dataset for scanning electron microscopy based local fiber volume fraction analysis of non-crimp fabric glass fiber reinforced composites. *Composites - Part A: Applied Science and Manufacturing*, 2023
4. Mathias Falck Schmidt, Jakob Lønborg Christensen, Vedrana Andersen Dahl, Ahmed Toosy, Axel Petzold, James VM Hanson, Sven Schippling, Jette Lautrup Frederiksen, and Michael Larsen. Automated detection of hyperreflective foci in the outer nuclear layer of the retina. *Acta Ophthalmologica*, 101(2):200–206, 2023
5. Robert M Auenhammer, Niels Jeppesen, Lars P Mikkelsen, Vedrana A Dahl, Brina J Blinzler, and Leif E Asp. Robust numerical analysis of fibrous composites from x-ray computed tomography image data enabling low resolutions. *Composites Science and Technology*, p. 109458, 2022
6. Anders Galatius, Michelle Strecker Svendsen, Dolores Messer, Mia Valtonen, Michael McGowen, Richard Sabin, Vedrana Andersen Dahl, Anders Bjorholm Dahl, and Morten Tange Olsen. Range-wide variation in grey seal (halichoerus grypus) skull morphology. *Zoology*, 153:126023, 2022
7. ⋆ Patrick Møller Jensen, Niels Jeppesen, Anders Bjorholm Dahl, and Vedrana Andersen Dahl. Review of serial and parallel min-cut/max-flow algorithms for computer vision. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2022
8. Pierre Tichit, Tunhe Zhou, Hans Martin Kjer, Vedrana Andersen Dahl, Anders Bjorholm Dahl, and Emily Baird. Insegtcone: Interactive segmentation of crystalline cones in compound eyes. *BMC Zoology*, 7(1):1–12, 2022
9. Dolores Messer, Michael Atchapero, Mark B Jensen, Michelle S Svendsen, Anders Galatius, Morten T Olsen, Jeppe R Frisvad, Vedrana A Dahl, Knut Conradsen, and Anders B Dahl. Using virtual reality for anatomical landmark annotation in geometric morphometrics. *PeerJ*, 10:e12869, 2022
10. Robert M Auenhammer, Niels Jeppesen, Lars P Mikkelsen, Vedrana A Dahl, and Leif E Asp. X-ray computed tomography data structure tensor orientation mapping for finite element models—stxae. *Software Impacts*, p. 100216, 2022
11. Sofie Bech Andersen, Iman Taghavi, Hans Martin Kjer, Stinne Byrholdt Søgaard, Carsten Gundlach, Vedrana Andersen Dahl, Michael Bachmann Nielsen, Anders Bjorholm Dahl, Jørgen Arendt Jensen, and Charlotte Mehlin Sørensen. Evaluation of 2d super-resolution ultrasound imaging of the rat renal vasculature using ex vivo micro-computed tomography. *Scientific reports*, 11(1):1–13, 2021
12. Marius Reichardt, Patrick Moller Jensen, Vedrana Andersen Dahl, Anders Bjorholm Dahl, Maximilian Ackermann, Harshit Shah, Florian Länger, Christopher Werlein, Mark P Kuehnel, Danny Jonigk, et al. 3d virtual histopathology of cardiac tissue from covid-19 patients based on phase-contrast x-ray tomography. *Elife*, 10:e71359, 2021
13. ⋆ Niels Jeppesen, Lars Pilgaard Mikkelsen, Anders Bjorholm Dahl, Anders Nymark Christensen, and Vedrana Andersen Dahl. Quantifying effects of manufacturing methods on fiber orientation in unidirectional composites using structure tensor analysis. *Composites Part A: Applied Science and Manufacturing*, 149:106541, 2021
14. Ying Wang, Monica J Emerson, Knut Conradsen, Anders B Dahl, Vedrana A Dahl, Eric Maire, and Philip J Withers. Evolution of fibre deflection leading to kink-band formation in unidirectional glass fibre/epoxy composite under axial compression. *Composites Science and Technology*, 213:108929, 2021
15. Dolores Messer, Michelle S Svendsen, Anders Galatius, Morten T Olsen, Vedrana A Dahl, Knut Conradsen, and Anders B Dahl. Measurement error using a seemalab structured light 3d scanner against a microscribe

3d digitizer. *PeerJ*, 9:e11804, 2021

⋆ 16. Jakeoung Koo, Anders B Dahl, J Andreas Bærentzen, Qiongyang Chen, Sara Bals, and Vedrana A Dahl. Shape from projections via differentiable forward projector for computed tomography. *Ultramicroscopy*, 224:113239, 2021

17. Elise O Brenne, Vedrana A Dahl, and Peter S Jørgensen. A physical model for microstructural characterization and segmentation of 3d tomography data. *Materials Characterization*, 171:110796, 2021

⋆ 18. Jakeoung Koo, Anders Bjorholm Dahl, and Vedrana Andersen Dahl. DALM, deformable attenuation-labeled mesh for tomographic reconstruction and segmentation. *IEEE Transactions on Computational Imaging*, 7:151–163, 2021

19. Mariam Andersson, Hans Martin Kjer, Jonathan Rafael-Patino, Alexandra Pacureanu, Bente Pakkenberg, Jean-Philippe Thiran, Maurice Ptito, Martin Bech, Anders Bjorholm Dahl, Vedrana Andersen Dahl, and Tim B. Dyrby. Axon morphology is modulated by the local environment and impacts the noninvasive investigation of its structure–function relationship. *Proceedings of the National Academy of Sciences*, 117(52):33649–33659, 2020

20. Anne Sofie Wessel Lindberg, Vedrana Andersen Dahl, Isabelle Karlesand, Lea Lybek Rueløkke, Lasse Malmqvist, and Steffen Hamann. Determination of peripapillary vessel density in optic disc drusen using edi-oct and oct angiography. *Experimental Cell Research*, 197, August 2020

21. Lars B Dahlin, Kristian R Rix, Vedrana A Dahl, Anders B Dahl, Janus N Jensen, Peter Cloetens, Alexandra Pacureanu, Simin Mohseni, Niels OB Thomsen, and Martin Bech. Three-dimensional architecture of human diabetic peripheral nerves revealed by X-ray phase contrast holographic nanotomography. *Scientific reports*, 10(1):1–8, 2020

22. Merit Bodner; Janet Jonna Bentzen; Vedrana Andersen Dahl; Silvia M. Alfaro; Thomas Steenberg; Hans Aage Hjuler and Søren Bredmose Simonsen. Structural characterization of membrane-electrode-assemblies in high temperature polymer electrolyte membrane fuel cells. *Journal of the Electrochemical Society*, 166, 2019

23. Sofie Wolter, Frederik Alexander Hvelplund Uhre, Marianne Tange Hasholt, Vedrana Andersen Dahl, and François Anton. Air void analysis of hardened concrete by means of photogrammetry. *Construction and Building Materials*, 226:953–964, 2019

24. Tuan T. Nguyen, Vedrana A. Dahl, and J. Andreas Bærentzen. Multi-phase image segmentation with the adaptive deformable mesh. *Pattern Recognition Letters*, 117:97–103, 2019

25. Leise Borg, Jon Sporring, Erik B. Dam, Vedrana A. Dahl, Tim B. Dyrby, Robert Feidenhans'l, Anders B. Dahl, and Jessica Pingel. Muscle fibre morphology and microarchitecture in cerebral palsy patients obtained by 3d synchrotron x-ray computed tomography. *Computers in Biology and Medicine*, 107:265 – 269, 2019

⋆ 26. Monica Jane Emerson, Ying Wang, Philip John Withers, Knut Conradsen, Anders Bjorholm Dahl, and Vedrana Andersen Dahl. Quantifying fibre reorientation during axial compression of a composite through time-lapse X-ray imaging and individual fibre tracking. *Composites Science and Technology*, 168:47–54, 2018

27. Anna Fedrigo, Kasper Marstal, Christian Bender Koch, Vedrana Andersen Dahl, Anders Bjorholm Dahl, Mark Lyksborg, Carsten Gundlach, Frédéric Ott, and Markus Strobl. Investigation of a Monturaqui impactite by means of bi-modal x-ray and neutron tomography. *Journal of Electronic Imaging*, 4(5), 2018

28. Monica Jane Emerson, Vedrana Andersen Dahl, Knut Conradsen, Lars Pilgaard Mikkelsen, and Anders Bjorholm Dahl. A multimodal data-set of a unidirectional glass fibre reinforced polymer composite. *Data in Brief*, 2018

29. Monica Jane Emerson, Vedrana Andersen Dahl, Knut Conradsen, Lars Pilgaard Mikkelsen, and Anders Bjorholm Dahl. Statistical validation of individual fibre segmentation from tomograms and microscopy. *Composites Science and Technology*, 160:208–215, 2018

30. Anne-Sofie Wessel Lindberg, Thomas Martini Jørgensen, and Vedrana Andersen Dahl. Linear, transfinite and weighted method for interpolation from grid lines applied to OCT images. *Applied Soft Computing*, 2018

31. Vedrana Andersen Dahl, Anders Bjorholm Dahl, and Per Christian Hansen. Computing segmentations directly from x-ray projection data via parametric deformable curves. *Measurement Science and Technology*, 29(1), 2018

32. Lasse Malmqvist, Anne-Sofie Wessel Lindberg, Vedrana Andersen Dahl, Thomas Martini Jørgensen, and Steffen Hamann. Quantitatively measured anatomic location and volume of optic disc drusen: An enhanced depth imaging optical coherence tomography study. *Investigative Ophthalmology & Visual Science*, 58(5):2491–2497, 2017

33. Tuan T. Nguyen, Vedrana Andersen Dahl, and J. Andreas Bærentzen. Cache-mesh, a dynamics data structure for performance optimization. *Procedia Engineering*, 203:193–205, 2017

Publications in peer-reviewed conference proceedings and book series

1. Vedrana Andersen Dahl and Anders Bjorholm Dahl. Fast local thickness. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition*, pp. 4335–4343, 2023
2. Mathias Micheelsen Lowes, Jakob L Christensen, Bjørn Schreblowski Hansen, Morten Rieger Hannemose, Anders Bjorholm Dahl, and Vedrana Dahl. Interactive scribble segmentation. In *Proceedings of the Northern Lights Deep Learning Workshop*, volume 4, 2023
3. Jakob Christensen, Patrick Jensen, Morten Hannemose, Anders Dahl, and Vedrana Dahl. LayeredCNN: Segmenting layers with autoregressive models. In *Proceedings of the Northern Lights Deep Learning Workshop*, volume 3, 2022
4. Bjørn Hansen, Mathias Lowes, Thomas Ørkild, Anders Dahl, Vedrana Dahl, Ole de Backer, Oscar Camara, Rasmus Paulsen, Christian Ingwersen, Kristine Sørensen, et al. SparseMeshCNN with self-attention for segmentation of large meshes
- ⋆ 5. Niels Jeppesen, Patrick M Jensen, Anders N Christensen, Anders B Dahl, and Vedrana A Dahl. Faster multi-object segmentation using parallel quadratic pseudo-boolean optimization. In *Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV)*, pp. 6260–6269, 2021
6. Jakeoung Koo, Elise Otterlei Brenne, Anders Bjorholm Dahl, and Vedrana Andersen Dahl. A tomographic reconstruction method using coordinate-based neural network with spatial regularization. In *Proceedings of the Northern Lights Deep Learning Workshop*, volume 2, 2021
- ⋆ 7. Niels Jeppesen, Anders N. Christensen, Vedrana A. Dahl, and Anders B. Dahl. Sparse layered graphs for multi-object segmentation. In *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, June 2020
- ⋆ 8. Patrick M. Jensen, Anders B. Dahl, and Vedrana A. Dahl. Multi-object graph-based segmentation with non-overlapping surfaces. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*, June 2020
- ⋆ 9. Vedrana A. Dahl, Monica J. Emerson, Camilla H. Trinderup, and Anders B. Dahl. Content-based propagation of user markings for interactive segmentation of patterned images. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*, June 2020
10. Niels Jeppesen, Vedrana Andersen Dahl, Anders Nymark Christensen, Anders Bjorholm Dahl, and Lars Pilgaard Mikkelsen. Characterization of the fiber orientations in non-crimp glass fiber reinforced composites using structure tensor. In *IOP Conference Series: Materials Science and Engineering*, volume 942, p. 012037. IOP Publishing, 2020
- ⋆ 11. Astrid ME Engberg, Abdullah Amini, Anne Willerslev, Michael Larsen, Birgit Sander, Line Kessel, Anders B Dahl, and Vedrana A Dahl. Automated quantification of macular vasculature changes from octa images of hematologic patients. In *2020 IEEE 17th International Symposium on Biomedical Imaging (ISBI)*, pp. 1987–1991. IEEE, 2020
12. Tuan T. Nguyen, Vedrana A. Dahl, J. Andreas. Bærentzen, and Anders B. Dahl. Deformable mesh evolved by similarity of image patches. In *2019 IEEE International Conference on Image Processing (ICIP)*, pp. 2731–2735, Sep. 2019
13. Filip Salling Rasmussen, Monica Jane Emerson, Mads Rostgaard Sonne, Jesper Henri Hattel, Lars Pilgaard Mikkelsen, and Vedrana Andersen Dahl. Fiber segmentation from 3d x-ray computed tomography of composites with continuous textured glass fibre yarns. In *Proceedings of 2019 International Conference on Tomography of Materials & Structures*, 2019
14. Kristine Aavild Juhl, Rasmus Reinhold Paulsen, Anders Bjorholm Dahl, Vedrana Andersen Dahl, Ole De Backer, Klaus Fuglsang Kofoed, and Oscar Camara. Guiding 3d u-nets with signed distance fields for creating 3d models from images. In *Medical Imaging with Deep Learning 2019, MIDL 2019*, 2019
15. Monica Jane Emerson, Kristine M. Jespersen, Ying Wang, Philip J. Withers, Vedrana Andersen Dahl, Knut Conradsen, Lars Pilgaard Mikkelsen, and Anders Bjorholm Dahl. Insegt fibre: A powerful segmentation tool for quantifying fibre architecture in composites. In *Proceedings of 2019 International Conference on Tomography of Materials & Structures*, 2019

16. Monica Jane Emerson, Anders Bjorholm Dahl, Knut Conradsen, and Vedrana Andersen Dahl. Insegt fibre: a user-friendly software for individual fibre segmentation. In *Proceedings of 22nd International Conference on Composites Materials*, 2019
17. Elise Otterlei Brenne, Vedrana Andersen Dahl, and Peter Stanley Jørgensen. Modelling intensity and gradient distribution of 3d tomography data for direct extraction of physical parameters and robust evaluation of segmentation. In *Proceedings of 2019 International Conference on Tomography of Materials & Structures*, 2019
18. Vedrana Andersen Dahl and Anders Bjorholm Dahl. Global similarity with additive smoothness for spectral segmentation. In *Scale Space and Variational Methods in Computer Vision*, pp. 357–368. Springer, 2019
19. Astrid Margareta Elisabet Engberg, Jesper H. Erichsen, Birgit Sander, Line Kessel, Anders Bjorholm Dahl, and Vedrana Andersen Dahl. Automated quantification of retinal microvasculature from oct angiography using dictionary-based vessel segmentation. *Communications in Computer and Information Science*, 2019
20. Patrick M. Jensen, Camilla Himmelstrup Trinderup, Anders Bjorholm Dahl, and Vedrana Andersen Dahl. Zonohedral approximation of spherical structuring element for volumetric morphology. In *Proceedings of Scandinavian Conference on Image Analysis 2019*. Springer, 2019
21. Prateek Saxena, Giuliano Bissacco, Carsten Gundlach, Vedrana Andersen Dahl, Camilla Himmelstrup Trinderup, and Anders Bjorholm Dahl. Process characterization for molding of paper bottles using computed tomography and structure tensor analysis. *E-Journal of Nondestructive Testing & Ultrasonics*, 24(3), 2019
22. Tuan Nguyen Trung, Vedrana Andersen Dahl, Jakob Andreas Bærentzen, and Camilla Himmelstrup Trinderup. Multi-phase volume segmentation with tetrahedral mesh. In *Proceedings of British Machine Vision Conference*, 2018
23. Vedrana Andersen Dahl, Anders Bjorholm Dahl, Camilla Himmelstrup Trinderup, and Carsten Gundlach. Layered surface detection for virtual unrolling. In *Proceedings of 24nd International Conference on Pattern Recognition (ICPR 2018)*. IEEE, 2018
24. Anne-Sofie Wessel Lindberg, Thomas Martini Jørgensen, and Vedrana Andersen Dahl. Interpolation from grid lines: Linear, transfinite and weighted method. In *Image Analysis*, p. 338–349. Springer, 2017
25. Vedrana Andersen Dahl and Anders Bjorholm Dahl. A probabilistic framework for curve evolution. In *Scale Space and Variational Methods in Computer Vision*, pp. 421–32. Springer, 2017
26. Anders Nymark Christensen, Christian Thode Larsen, Camilla Maria Mandrup Jensen, Martin Bæk Petersen, Rasmus Larsen, Knut Conradsen, and Vedrana Andersen Dahl. Automatic segmentation of abdominal fat in mri-scans, using graph-cuts and image derived energies. In *Image Analysis*, volume 10270, pp. 109–120. Springer, 2017
27. Monica Jane Emerson, Anders Bjorholm Dahl, Vedrana Andersen Dahl, Knut Conradsen, and Lars Pilgaard Mikkelsen. New approach for validating the segmentation of 3D data applied to individual fibre extraction. In *Proceedings of 3rd International Conference on Tomography of Materials and Structures*. 2017
28. Camilla Himmelstrup Trinderup, Vedrana Andersen Dahl, Kristian Murphy Gregersen, Ludovic Antoine Alexandre Orlando, and Anders Bjorholm Dahl. The traveling optical scanner – case study on 3D shape models of ancient brazilian skulls. In *Proceedings of the 7th International Conference on Image and Signal Processing (ICISP 2016)*, pp. 398–405. Springer, 2016
29. Vedrana Andersen Dahl, Gudmundur Einarsson, Tron Andre Darvann, Nuno Vibe Hermann, Hanne Buciek Hove, Naoya Kakimoto, Sven Kreiborg, and Anders Bjorholm Dahl. Automatic measurement of orbital volume in unilateral coronal synostosis. In *Proceedings of the 13th International Symposium on Biomedical Imaging (ISBI 2016)*, pp. 889–893. IEEE, 2016
30. Lars Pilgaard Mikkelsen, Monica Jane Emerson, Kristine Munk Jespersen, Vedrana Andersen Dahl, Knut Conradsen, and Anders Bjorholm Dahl. X-ray based micromechanical finite element modeling of composite materials. In *Proceedings of 29th Nordic Seminar on Computational Mechanics*. 2016
31. Anders Bjorholm Dahl and Vedrana Andersen Dahl. Dictionary based image segmentation. In *Image Analysis*, pp. 39–50. Springer Science+Business Media B.V., 2015
32. Thomas Martini Jørgensen, Faroq Al-Tam, and Vedrana Andersen Dahl. Artifact removal in differential phase contrast X-ray computed tomography. In C. Maltin, C. Craigie, and L. Bünger, editors, *Farm animal imaging*, pp. 105–108. European Cooperation in Science and Technology, 2015
33. Vedrana Andersen Dahl, Asger Nyman Christiansen, and Jakob Andreas Bærentzen. Multiphase image segmentation using the deformable simplicial complex method. In Lisa O'Conner, editor, *Proceedings of 22nd*

International Conference on Pattern Recognition (ICPR 2014), pp. 1002–1007. IEEE, 2014

34. Anders Bjorholm Dahl and Vedrana Andersen Dahl. Dictionary snakes. In Lisa O'Conner, editor, *Proceedings of the 22nd International Conference on Pattern Recognition (ICPR 2014)*, pp. 142–147. IEEE, 2014
35. Vedrana Andersen Dahl, Anders Bjorholm Dahl, and Rasmus Larsen. Surface detection using round cut. In *Proceedings of the International Conference on 3D Vision (3DV 2014)*, pp. 82–89. IEEE, 2014
36. Vedrana Andersen, Henrik Aanæs, Jakob Andreas Bærentzen, and Mads Nielsen. Markov random fields on triangle meshes. In Vaclav Scala, editor, *18th International Conference in Central Europe on Computer Graphics, Visualization and Computer Vision*, pp. 265–270. 2010
37. Vedrana Andersen, Henrik Aanæs, and Jakob Andreas Bærentzen. Surfel based geometry resonstruction. In John Collomosse and Ian Grimstead, editors, *Theory and Practice of Computer Graphics 2010*, pp. 39–44. Eurographics Association, 2010
38. Vedrana Andersen, Mathieu Desbrun, Jakob Andreas Bærentzen, and Henrik Aanæs. Height and tilt geometric texture. In G. Bebis, editor, *Advances in Visual Computing*, volume Part 1, pp. 656–667. Springer, 2009

Other publications

1. Dolores Messer, Jakob Wilm, Eythor R. Eiriksson, Vedrana A. Dahl, and Anders B. Dahl. Image-based alignment of 3d scans, 2021
2. Emil Hovad, Helena Hansen, André Filipe da Silva Rodrigues, and Vedrana Andersen Dahl. Automatic detection of rail defects from images. In *Intelligent Quality Assessment of Railway Switches and Crossings*, pp. 187–205. Springer, 2021
3. Vedrana Andersen Dahl, Jakeoung Koo, Per Christian Hansen, and Anders Bjorholm Dahl. Deformable curves for outlining objects directly from projections. In *69th Annual Conference of the Nordic Microscopy Society, Scandem 2018*, 2018. Abstract for 69th Annual Conference of the Nordic Microscopy Society, Scandem 2018. Selected for an oral presentation
4. Anne-Sofie Wessel Lindberg, Lasse Malmqvist, Steffen Hamann, Thomas Martini Jørgensen, and Vedrana Andersen Dahl. Quantitative measure of optic disc drusen location in enhanced depth imaging optical coherence tomography scans. Abstract from Annual Meeting of the Association for Research in Vision and Ophthalmology (ARVO), Baltimore, USA
5. Lars Dahlin, Vedrana Dahl, Peter Cloetens, Alexandra Pacureanu, Anders Dahl, and Martin Bech. Visualization of human posterior interosseous nerves in healthy subjects and in patients with type 1 and 2 diabetes by x-ray phase contrast zoom tomography. Abstract from 72nd Annual Meeting of the American Society for Surgery of the Hand, San Francisco, USA
6. Monica Jane Emerson, Ying Wang, Kristine Munk Jespersen, Lars Pilgaard Mikkelsen, Philip J. Withers, Knut Conradsen, Vedrana Andersen Dahl, and Anders Bjorholm Dahl. Unidirectional fibre composite characterisation from X-ray tomography. In *The Minerals, Metals & Materials Society Annual Meeting*, 2017
7. Tuan Nguyen Trung, Vedrana Andersen Dahl, and Jakob Andreas Bærentzen. Multi-phase volume segmentation with tetrahedral mesh. In *2017 IEEE 2nd International Conference on Signal and Image Processing - Singapore, Singapore*, 2017
8. Monica Jane Emerson, Vedrana Andersen Dahl, Lars Pilgaard Mikkelsen, Anders Bjorholm Dahl, and Knut Conradsen. Geometrical characterisation of individual fibres from X-ray tomograms. In J. Høsberg and N.L. Pedersen, editors, *Proceedings of the 30th Nordic Seminar on Computational Mechanics (NSCM-30)*, p. 59. 2017
9. Vedrana Andersen Dahl, Christel Andersson, Camilla Himmelstrup Trinderup, and Carsten Gundlach. Layered surface detection in micro-ct tetra pak data. In *4th International Conference on Neutrons and Food - Lund, Sweden*, 2016
10. Vedrana Andersen, Henrik Aanæs, Jakob Andreas Bærentzen, and Mads Nielsen. Markov random fields on 3D polygonal meshes. In *Proceedings of the 16th Danish Conference on Pattern Recognition and Image Analysis*, pp. 16–17. University of Copenhagen, Department of Computer Science, 2008
11. Vedrana Andersen, Henrik Aanæs, and Jakob Andreas Bærentzen. *3D Shape Modeling Using High Level Descriptors*. PhD thesis, Technical University of Denmark, DTU Informatics, Building 321, 2011