Publications of Kim Steenstrup Pedersen

September 12, 2021

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Ph.D. thesis:

• Kim S. Pedersen. Statistics of Natural Image Geometry. Ph.D. Thesis, Department of Computer Science, University of Copenhagen, Denmark, January 2003. Published as DIKU tech. report no. 2003/04.

Scientific journal papers: (14)

- J. Rasmussen, J. Nielsen, J. C. Streibig, J. E. Jensen, K. S. Pedersen, S. I. Olsen. Pre-harvest weed mapping
 of Cirsium arvense in wheat and barley with off-the-shelf UAVs. Precision Agriculture, pp. 1 17, 2019. BFI:
 1, JIF: 4,454.
- Jan Kremer, Kristoffer Stensbo-Smidt, Fabian Gieseke, **Kim Steenstrup Pedersen**, Christian Igel. Big universe, big data: Machine learning and image analysis for astronomy. IEEE Intelligent Systems, 32(2): 16–22, 2017. BFI: 2, JIF: 2,596.
- K. Stensbo-Smidt, F. Gieseke, C. Igel, A. Zirm, K. S. Pedersen. Sacrificing information for the greater good: How to select photometric bands for optimal accuracy. Monthly Notices of the Royal Astronomical Society, 464 (3): 2577–2596, 2017. BFI: 2, JIF: 5,194.
- Jan Kremer, Fabian Gieseke, **Kim Steenstrup Pedersen**, Christian Igel. Nearest neighbor density ratio estimation for large-scale applications in astronomy. Astronomy and Computing, Vol. 12: 67–72, 2015. JIF: 1,92.
- Jan Kremer, **Kim Steenstrup Pedersen**, Christian Igel. Active learning with support vector machines. Wiley Interdisciplinary Reviews. Data Mining and Knowledge Discovery, Vol. 4 (4):313–326, 2014. JIF: 1,594.
- Søren Hauberg, Francois Lauze, and **Kim Steenstrup Pedersen**. Unscented Kalman Filtering on Riemannian Manifolds. Journal of Mathematical Imaging and Vision, 46(1): 103–120, 2013. BFI: 2, JIF: 2,33.
- Henrik Aanæs, Anders L. Dahl and **Kim S. Pedersen**. Interesting Interest Points: A Comparative Study of Interest Point Performance on a Unique Data Set. International Journal of Computer Vision, Vol. 97(1): 18–35, 2012. BIF: 2, JIF: 3,62.
- Søren Hauberg, Stefan Sommer and **Kim S. Pedersen**. Natural metrics and least-committed priors for articulated tracking. Image and Vision Computing, 30(6-7):453-461, June 2012. BIF: 2, JIF: 1,96.
- Søren Hauberg and Kim S. Pedersen. Predicting Articulated Human Motion from Spatial Processes. International Journal of Computer Vision. Vol. 94 (3): 317–334, 2011. BIF: 2, JIF: 3,741.
- Anne Cuzol, **Kim S. Pedersen** and Mads Nielsen. Field of Particle Filters for Image Inpainting. Journal of Mathematical Imaging and Vision, Vol. 31(2-3): 147-156, 2008. BFI: 2, JIF: 1,331.
- Bo Markussen, **Kim S. Pedersen** and Marco Loog. Second Order Structure of Scale-Space Measurements. Journal of Mathematical Imaging and Vision, Vol. 31(2-3): 207–220, 2008. BFI: 2, JIF: 1,331.
- Mads Nielsen, Marleen de Bruijne, Camilla Jørgensen, Søren I. Olsen, **Kim Steenstrup Pedersen**, and Jon Sporring. Special issue on tribute workshop for peter johansen (editorial). Journal of Mathematical Imaging and Vision, 31(2-3):119-120, July 2008. BFI: 2, JIF: 1,331.
- Ann B. Lee, **Kim S. Pedersen** and David Mumford. The Nonlinear Statistics of High-Contrast Patches in Natural Images. In International Journal of Computer Vision, 54 (1 / 2): 83-103, August / September 2003.
- Kim S. Pedersen and Mads Nielsen: The Hausdorff Dimension and Scale-Space Normalisation of Natural Images. In Journal of Visual Communication and Image Representation, 11(2):266–277, 2000.

Peer reviewed conference papers: (36)

- Ole-Christian Galbo Engstrøm, Erik Schou Dreier, and **Kim Steenstrup Pedersen**. Predicting Protein Content in Grain Using Hyperspectral Deep Learning. In Proceedings of 7th Workshop on Computer Vision in Plant Phenotyping and Agriculture (CVPPA). Accepted for publication, 2021.
- Xiao Hu, François Lauze, **Kim Steenstrup Pedersen**, and Jean Mélou. Absolute and Relative Pose Estimation in Refractive Multi View. In Proceedings of 1st Workshop on Traditional Computer Vision in the Age of Deep Learning (TradiCV). Accepted for publication, 2021.
- Georgios Karagiannis, Søren Ingvor Olsen, **Kim Steenstrup Pedersen**. Deep Learning for Detection of Railway Signs and Signals. In Advances in Computer Vision Proceedings of the 2019 Computer Vision Conference, CVC 2019, Las Vegas, Nevada, USA, Vol. 943, pp. 1–15, 2020.
- Wouter M. Kouw, Silas N. Ørting, Jens Petersen Kim S. Pedersen, and Marleen de Bruijne. A Cross-Center Smoothness Prior for Variational Bayesian Brain Tissue Segmentation. In Proceedings of International Conference on Information Processing in Medical Imaging IPMI 2019: Information Processing in Medical Imaging. Springer, LNCS 11492, pp. 360–371, 2019.
- Kim Steenstrup Pedersen, Kristoffer Stensbo-Smidt, Andrew Zirm, and Christian Igel. Shape Index Descriptors Applied to Texture-Based Galaxy Analysis. In Proceedings of International Conference on Computer Vision (ICCV 2013), pp. 2440 2447, 2013.
- Kristoffer Stensbo-Smidt, Christian Igel, Andrew Zirm, and **Kim Steenstrup Pedersen**. Nearest Neighbour Regression Outperforms Model-based Prediction of Specific Star Formation Rate. In Proceedings of IEEE Big Data 2013 Workshop on Scalable Machine Learning, 2013.
- Cristina Manfredotti, **Kim Steenstrup Pedersen**, Howard J. Hamilton, and Sandra Zilles. Learning Models of Activities Involving Interacting Objects. In Advances in Intelligent Data Analysis XII, 12th International Symposium, IDA 2013, London, UK, October 17-19, 2013, Proceedings (IDA 2013), volume 8207 of Lecture Notes in Computer Science, 2013.
- Anders Boesen Lindbo Larsen, Sune Darkner, Anders Lindbjerg Dahl and **Kim Steenstrup Pedersen**. Jet-Based Local Image Descriptors. In Proceedings of European Conference on Computer Vision (ECCV), volume 7574 of Lecture Notes in Computer Science, pages 638-650. Springer Berlin / Heidelberg, 2012.
- Søren Hauberg and **Kim Steenstrup Pedersen**. Spatial Measures between Human Poses for Classification and Understanding. In Articulated Motion and Deformable Objects (AMDO), volume 7378 of Lecture Notes in Computer Science, pages 26-36. Springer Berlin / Heidelberg, 2012.
- Søren Hauberg and **Kim S. Pedersen**. Data-Driven Importance Distributions for Articulated Tracking. In Energy Minimization Methods in Computer Vision and Pattern Recognition (EMMCVPR) 2011. Lecture Notes in Computer Science 6819, pp. 287–299, 2011.
- Peter Mysling, Søren Hauberg and **Kim S. Pedersen**. An Empirical Study on the Performance of Spectral Manifold Learning Techniques. In Proceedings of International Conference on Artificial Neural Networks (ICANN'11). Springer Lecture Notes in Computer Science 6791, pp. 347–354, 2011.
- Anders Lindbjerg Dahl, Henrik Aanæs, and **Kim Steenstrup Pedersen**. Finding the Best Feature Detector-Descriptor Combination. Proceedings of 3DIMPVT 2011. 2011.
- Anders Boesen Linbo Larsen, Søren Hauberg, Kim Steenstrup Pedersen. Unscented Kalman Filtering for Articulated Human Tracking. Proceedings of SCIA 2011. Lecture Notes in Computer Science 6688, pp. 228–237 2011.
- Søren Hauberg and **Kim Steenstrup Pedersen**. Stick It! Articulated Tracking using Spatial Rigid Object Priors. Proceedings of ACCV. Springer Lecture notes 6494, pp. 758-769. 2011.
- Søren Hauberg, Stefan H. Sommer, and **Kim Steenstrup Pedersen**. Gaussian-like Spatial Priors for Articulated Tracking. Computer Vision ECCV 2010: 11th European Conference on Computer Vision, Heraklion, Crete, Greece, September 5-11, 2010, Proceedings, Part I. Daniilidis, K., Maragos, P. & Paragios, N. (Ed.). Springer pp. 425-437. (Lecture Notes in Computer Science; 6311). 2010,
- Henrik Aanæs, Anders Lindbjerg Dahl, and **Kim Steenstrup Pedersen**. On Recall Rate of Interest Point Detectors. Electronic Proceedings of 3DPVT'10: The Fifth International Symposium on 3D Data Processing, Visualization and Transmission. pp. 1-8. 2010.
- Morten Engell-Nørregård, Søren Hauberg, Jerome Lapuyade, Kenny Erleben, and **Kim Steenstrup Pedersen**. Interactive Inverse Kinematics for Monocular Motion Estimation. In Proceedings of VRIPHYS 2009.

- Søren Hauberg, Jerome Lapuyade, Morten Engell-Nørregård, Kenny Erleben, and **Kim Steenstrup Pedersen**. Three dimensional monocular human motion analysis in end-effector space. In Daniel Cremers et al., editors, Energy Minimization Methods in Computer Vision and Pattern Recognition, Lecture Notes in Computer Science, pages 235-248. Springer, August 2009.
- David Gustavsson, Kim S. Pedersen, Francois Lauze, and Mads Nielsen. On the rate of structural change in scale spaces. Proceedings of Scale Space and Variational Methods in Computer Vision (SSVM), 2009.
- David Gustavsson, Kim S. Pedersen, and Mads Nielsen. A SVD Based Image Complexity Measure. International Conference on Computer Vision Theory and Applications (VISAPP), 2009.
- Kim S. Pedersen, Marco Loog, and Pieter van Dorst. Salient Point and Scale Detection by Minimum Likelihood. *JMLR: Workshop and Conference Proceedings: Gaussian Processes in Practice*, 1: 59–72, 2007.
- Kim S. Pedersen, Marco Loog, and Bo Markussen. Generic Maximum Likely Scale Selection. 1st International Conference on Scale Space and Variational Methods in Computer Vision, Springer LNCS 4485, p. 362–373, 2007.
- Kim S. Pedersen and Peter Johansen. A Curious Robot: An Explorative-Exploitive Inference Algorithm. In Proceedings of Workshop on Robotics and Mathematics (ROBOMAT 2007), 2007.
- David Gustavsson, **Kim S. Pedersen**, and Mads Nielsen. Geometric and Texture Inpainting by Gibbs Sampling. Swedish Symposium on Image Analysis (SSBA '07), 2007.
- David Gustavsson, **Kim S. Pedersen**, and Mads Nielsen. Image Inpainting by Cooling and Heating. 15th Scandinavian Conference on Image Analysis, Springer LNCS 4522, p. 591–600, 2007.
- Sune Høgild Keller, **Kim S. Pedersen**, and Francois Lauze. Detecting Interlaced or Progressive Source of Video. In IEEE International Workshop on Multimedia Signal Processing (MMSP05), p. 181 184, 2005.
- Bo Markussen, **Kim S. Pedersen**, Marco Loog: A Scale Invariant Covariance Structure on Jet Space. *In Proceedings of International Workshop on Deep Structure, Singularities and Computer Vision*, p. 12 23, LNCS 3753, Springer-Verlag, June, 2005.
- Marco Loog, Kim S. Pedersen, Bo Markussen: Maximum Likely Scale Estimation. In Proceedings of International Workshop on Deep Structure, Singularities and Computer Vision, p. 146 156, LNCS 3753, Springer-Verlag, June, 2005.
- Kim S. Pedersen, Remco Duits, and Mads Nielsen: On Alpha Kernels, Levy Processes, and Natural Image Statistics. *In Proceedings of the 5th International Scale-Space conference*, p. 468 479, LNCS 3459, Springer-Verlag, April, 2005.
- Martin Lillholm and **Kim S. Pedersen**: Jet Based Feature Classification. *In Proceedings of International Conference on Pattern Recognition*, Cambridge, United Kingdom, p. 787 790, August 2004.
- Kim S. Pedersen and Martin Lillholm: Brownian Images: A Generic Background Model. In Proceedings of Workshop on Statistical Learning in Computer Vision (SLCV), Prague, Czech Republic. pp. 107-121, May 2004.
- Kim S. Pedersen: Properties of Brownian Image Models in Scale-Space. In Scale Space Methods in Computer Vision: Proceedings of the 4th Scale-Space conference, Isle of Skye, Scotland. LNCS 2695, p. 281-296, Springer-Verlag, June 2003.
- Kim S. Pedersen and Ann B. Lee: Toward a Full Probability Model of Edges in Natural Images. In Proceedings of the 7th European Conference on Computer Vision, ECCV'02, Copenhagen, Denmark. Vol. I, p. 328 342, LNCS 2350, Springer-Verlag, May, 2002.
- Ann B. Lee, **Kim S. Pedersen** and David Mumford: The Complex Statistics of High-Contrast Patches in Natural Images. In WWW Proceedings of Second International IEEE Workshop on Statistical and Computational Theories of Vision. Vancouver, Canada, July 2001. Available at http://pascal.stat.ucla.edu/~szhu/Workshops/SCTV2001.
- Kim S. Pedersen and Mads Nielsen: Computing Optic Flow by Scale-Space Integration of Normal Flow. In Scale-Space and Morphology in Computer Vision: Proceedings of Scale-Space 2001, p. 14 25, LNCS 2106, Springer Verlag, July 2001.
- Kim S. Pedersen and Mads Nielsen: The Hausdorff Dimension and Scale-Space Normalisation of Natural Images. Scale-Space Theory in Computer Vision: Scale-Space'99, Proceedings, p. 271 282, LNCS 1682, Springer Verlag, 1999.

Books, proceedings, and journal special issues: (5)

- Kim Steenstrup Pedersen, Rasmus Reinhold Paulsen. Special section on 19th Scandinavian conference on image analysis (SCIA 2015). Pattern Recognition Letters, Vol. 80, pages 238, September 2016.
- Rasmus Reinhold Paulsen, **Kim Steenstrup Pedersen** (Eds.). Image analysis: 19th Scandinavian Conference, SCIA 2015, Copenhagen, Denmark, June 15-17, 2015. Proceedings. Springer, 2015.
- Smith Lygum, Anne Kirstine; Skjødt Nielsen, Jacob; Bang Bådum, Nicklas; La Cour-Harbo, Anders; Paulin Hansen, John; **Pedersen, Kim Steenstrup**; Larsen, Lars Michael; Kessing, Peter Vedel; Madsen Almdal, Thomas; Ploug, Thomas; Grønbæk, David. Civile droner i Danmark: potentialer, udfordringer og anbefalinger. Teknologirådet, 2014. 103 p.
- Mads Nielsen, Marleen de Bruijne, Camilla Jørgensen, Søren I. Olsen, **Kim Steenstrup Pedersen**, and Jon Sporring. Special Issue on Tribute Workshop for Peter Johansen. Journal of Mathematical Imaging and Vision, volume 31(2-3). Springer, July 2008.
- Bjarne Kjær Ersbøll and **Kim S. Pedersen** (Eds.). Proceedings of the 15th Scandinavian Conference on Image Analysis SCIA 2007. Springer LNCS 4522, 2007.

Non peer reviewed conference publications and abstracts: (10)

- J. Rasmussen, J. Nielsen, S. I. Olsen, **K. S. Pedersen**, J. E. Jensen, R. Horfarter. From image acquisition with unmanned aerial vehicles (UAV) to patch spraying in farmer's fields. European Weed Research Society Symposium, 2018.
- Egilsson, Jon; **Pedersen, Kim Steenstrup**; Olsen, Søren Ingvor; Nielsen, Jon; Ntakos, George; Rasmussen, Jesper. Pre-harvest assessment of perennial weeds in cereals based on images from unmanned aerial systems (UAS). 17'th European Weed Research Society Symposium Weed Managing in Changing Environments. Montpellier, France, June 2015.
- Søren Hauberg and **Kim Steenstrup Pedersen**. A Physically Natural Metric for Human Motion and the Associated Brownian Motion Model. Abstract at 1st IEEE Workshop on Kernels and Distances for Computer Vision (ICCV workshop), 2011.
- Søren Hauberg, Bente Rona Jensen, Morten Engell-Nørregård, Kenny Erleben, and **Kim Steenstrup Pedersen**. Dense Marker-less Three Dimensional Motion Capture. Virtual Vistas; Eleventh International Symposium on the 3D Analysis of Human Movement. 2010.
- David Gustavsson, **Kim Steenstrup Pedersen**, and Mads Nielsen. Multi-scale natural images: a database and some statistics. In Søren I. Olsen, editor, Proceedings of 16'th Danish Conference on Pattern Recognition and Image Analysis (DSAGM) 2008, DIKU Technical Report 08-10. Department of Computer Science, University of Copenhagen, Denmark, 2008. Extended abstract.
- Bjarne Kjær Ersbøll and **Kim S. Pedersen**. Preface. (Eds.). Proceedings of the 15th Scandinavian Conference on Image Analysis SCIA 2007. Springer LNCS 4522, 2007.
- Kim S. Pedersen, Pieter van Dorst, and Marco Loog. Minimum Likelihood Image Feature and Scale Detection Based on the Brownian Image Model. *Gaussian Processes in Practice Workshop*, England, June, 2006. Extended abstract Web Publication: http://www.dcs.shef.ac.uk/ml/gpip/schedule.html.
- Peter Johansen and Kim S. Pedersen. Generalized Context Learning. In Proceedings of DSAGM'03, Copenhagen, Denmark, August 2003.
- Kim S. Pedersen and Mads Nielsen: Computing Optic Flow by Scale-Space Integration of Normal Flow. *In Proceedings of DSAGM'01, Den 10. Danske Konference om Mønstergenkendelse og Billedanalyse*. Technical Report DIKU-01-04, p. 124 135. Copenhagen, Denmark. August, 2001.
- Kim S. Pedersen and Mads Nielsen: The Hausdorff Dimension and Scale-Space Normalization of 'Natural Images'. In Proceedings of Øresyn'99, Öresund workshop för datamatsyn. Matematikcentrum, Lunds Universitet, January 15, 1999.

Technical Reports: (6)

- J. Rasmussen, J. Nielsen, J. C. Streibig, S. I. Olsen, K. S. Pedersen, and J. E. Jensen: Droner til monitering af flerårigt ukrudt i korn. Miljøstyrelsen, 2016.
- Søren Hauberg and **Kim S. Pedersen**: HUMIM Software for Articulated Tracking. Technical report. Datalogisk Institut, Københavns Universitet, 2012.
- Kim S. Pedersen and Ann B. Lee: Toward a Full Probability Model of Edges in Natural Images. *APPTS Report #02-1*, Division of Applied Mathematics Technical Reports on Applied Probability, Pattern Theory, and Statistics, Brown University, USA. January 2002.
- Ann B. Lee, **Kim S. Pedersen** and David Mumford: The Nonlinear Statistics of High-Contrast Patches in Natural Images. *APPTS Report #01-3*, Division of Applied Mathematics Technical Reports on Applied Probability, Pattern Theory, and Statistics, Brown University, USA. June 2001. Revised December 2001.
- Kim S. Pedersen: Turbulence in Optical Flow Fields. *Technical Report DIKU-00-3*, DIKU, Department of Computer Science, University of Copenhagen, Universitetsparken 1, DK-2100 Copenhagen, Denmark. January 2001.
- Kim S. Pedersen: Normalisering af billedafledte i skalarum ved hjælp af den fraktale dimension. *Technical Report DIKU-99-2*, Department of Computer Science, University of Copenhagen, Universitetsparken 1, DK-2100 Copenhagen, Denmark, January 1999.