

# Publications of Kim Steenstrup Pedersen

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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.

## Peer reviewed scientific journal papers: (18)

- Roberta Hunt, José L Reyes-Hernández, Josh Jenkins Shaw, Alexey Solodovnikov, **Kim Steenstrup Pedersen.** Integrating Deep Learning Derived Morphological Traits and Molecular Data for Total-Evidence Phylogenetics: Lessons from Digitized Collections. *Systematic Biology*, 2025; syae072, DOI: 10.1093/sysbio/syae072
- Ole-Christian Galbo Engstrøm, Erik Schou Dreier, Birthe Møller Jespersen, and **Kim Steenstrup Pedersen.** IKPLS: Improved Kernel Partial Least Squares and Fast Cross-Validation Algorithms for Python with CPU and GPU Implementations Using NumPy and JAX. *Journal of Open Source Software* 9 (99), 6533, 2024. DOI: 10.21105/joss.06533
- Xiao Hu, F. Lauze, **K. Steenstrup Pedersen.** Refractive Pose Refinement: Generalising the Geometric Relation between Camera and Refractive Interface. *International Journal of Computer Vision*, 131: 1448–1476, 2023. JIF: 11,478. DataDOI: 10.17894/ucph.5d1b9bea-b105-4d43-aefb-c53df7806c2a
- E. Schou Dreier, K. M. Sørensen, T. Lund-Hansen, B. Møller Jespersen, **K. Steenstrup Pedersen.** Hyperspectral imaging for classification of bulk grain samples with deep convolutional neural networks. *Journal of Near Infrared Spectroscopy*, 30(3): 107–121, April 2022. DOI: 10.1177/09670335221078356. DataDOI: 10.17894/ucph.f8c7feeb-3b27-4bd2-ba6d-6d44a4ab4330, JIF: 1,863.
- 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.
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- 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.
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- Ole-Christian Galbo Engstrøm, Erik Schou Dreier, Birthe Møller Jespersen, and **Kim Steenstrup Pedersen**. Improving Deep Learning on Hyperspectral Images of Grain by Incorporating Domain Knowledge from Chemometrics. 8th Workshop on Computer Vision in Plant Phenotyping and Agriculture (CVPPA), Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV). IEEE, s. 485–494, 2023.
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- **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.
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## Non peer reviewed conference publications and abstracts: (10)

- J. Rasmussen, J. Nielsen, S. I. Olsen, **K. S. Pedersen**, J. E. Jensen, R. Horfarther. 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 Ingvar; Nielsen, Jon ; Ntakos, George; Rasmussen, Jesper. Pre-harvest assessment of perennial weeds in cereals based on images from unmanned aerial systems (UAS). 17<sup>th</sup> 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.
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- Roberta Hunt, Kim Steenstrup Pedersen. The Phantom of the Elytra – Phylogenetic Trait Extraction from Images of Rove Beetles Using Deep Learning – Is the Mask Enough?. arXiv:2502.04541, 2025. <https://arxiv.org/abs/2502.04541>. DOI: 10.48550/arXiv.2502.04541
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- **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.
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