

List of publications

Dissertations

- PHD P. Kornprobst. *Contributions à la Restauration d'Images et à l'Analyse de Séquences: Approches Variationnelles et Solutions de Viscosité*. PhD thesis, Université de Nice-Sophia Antipolis, 1998.
- HDR P. Kornprobst. *Contributions en modélisation de la vision algorithmique et bio-inspirée*. Habilitation à diriger des recherches, Université de Nice-Sophia Antipolis, December 2007. 14 décembre 2007.

Book

- LI 1 G. Aubert and P. Kornprobst. Traitement des images numériques. In J. Akoka and I. Comyn-Wattiau, editors, *Encyclopédie de l'informatique et des systèmes d'information*, number 6, chapter 18, pages 861—879. Vuibert, November 2006.
- LI 2 F. Cazals and P. Kornprobst, editors. *Modeling in Computational Biology and Biomedicine: A Multidisciplinary Endeavor*. Lectures Notes in Mathematical and Computational Biology (LNMCB). Springer-Verlag, 2012. (to appear).

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- RI 1 P. Kornprobst, R. Deriche, and G. Aubert. Image sequence analysis via partial differential equations. *Journal of Mathematical Imaging and Vision*, 11(1):5–26, October 1999.
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- RI 4 O. Faugeras, G. Adde, G. Charpiat, C. Chef d'Hotel, M. Clerc, T. Deneux, R. Deriche, G. Hermosillo, R. Keriven, P. Kornprobst, J. Kybic, C. Lenglet, L. Lopez-Perez, T. Papadopoulo, J.-P. Pons, F. Ségonne, B. Thirion, D. Tschumperlé, T. Viéville, and N. Wotawa. Variational, geometric, and statistical methods for modeling brain anatomy and function. *NeuroImage*, 23S1:S46–S55, 2004. Special issue: Mathematics in Brain Imaging - Edited by P.M. Thompson, M.I. Miller, T. Ratnanather, R.A. Poldrack and T.E. Nichols.
- RI 5 R.R. Peeters, P. Kornprobst, M. Nikolova, S. Sunaert, T. Viéville, G. Malandain, R. Deriche, O. Faugeras, M. Ng, and P. Van Hecke. The use of superresolution techniques to reduce slice thickness in functional MRI. *International Journal of Imaging Systems and Technology (IJIST), Special issue on High Resolution Image Reconstruction*, 14:131–138, 2004.
- RI 6 T. Viéville, S. Chemla, and P. Kornprobst. How do high-level specifications of the brain relate to variational approaches? *Journal of Physiology - Paris*, 101(1-3):118–135, 2007.
- RI 7 Adrien Wohrer and Pierre Kornprobst. Virtual retina : A biological retina model and simulator, with contrast gain control. *Journal of Computational Neuroscience*, 26(2):219, 2009. DOI 10.1007/s10827-008-0108-4.
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- RI 9 M.-J. Escobar, G.S. Masson, T. Viéville, and P. Kornprobst. Action recognition using a bio-inspired feedforward spiking network. *International Journal of Computer Vision*, 82(3):284, 2009.
- RI 10 S. Paris, P. Kornprobst, J. Tumblin, and F. Durand. Bilateral filtering: Theory and applications. *Foundations and Trends in Computer Graphics and Vision*, 4(1), 2009.
- RI 11 Emilien Tlapale, Guillaume Masson, and Pierre Kornprobst. Modelling the dynamics of motion integration with a new luminance-gated diffusion mechanism. *Vision Research*, 50(17):1676–1692, August 2010.
- RI 12 A. Ramirez, M. Rivera, Pierre Kornprobst, and F. Lauze. Variational multi-valued velocity field estimation for transparent sequences. *Journal of Mathematical Imaging and Vision*, 40(3):285–304, 2011.
- RI 13 J.D. Bouecke, Emilien Tlapale, Pierre Kornprobst, and Heiko Neumann. Neural mechanisms of motion detection, integration, and segregation: From biology to artificial image processing systems. *EURASIP Journal on Advances in Signal Processing*, 2011, 2011. special issue on Biologically inspired signal processing: Analysis, algorithms, and applications.

- RI 14 K. Masmoudi, M. Antonini, and P. Kornprobst. Frames for exact inversion of the rank order coder. *IEEE Transactions on Neural Networks*, 2012. (to appear).
- RI 15 M.J. Escobar and P. Kornprobst. Action recognition via bio-inspired features: The richness of center-surround interaction. *Computer Vision and Image Understanding*, 2012. (to appear).
- Current submissions Signal Processing: Image Communication, Journal of Computational Neuroscience, Neural Computation

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- CI 1 R. Deriche, P. Kornprobst, and G. Aubert. Optical flow estimation while preserving its discontinuities: A variational approach. In *Proceedings of the 2nd Asian Conference on Computer Vision*, volume 2, pages 71–80, Singapore, December 1995.
- CI 2 P. Kornprobst, R. Deriche, and G. Aubert. Nonlinear operators in image restoration. In *Proceedings of the International Conference on Computer Vision and Pattern Recognition*, pages 325–331, San Juan, Puerto Rico, June 1997. IEEE Computer Society, IEEE Computer Society.
- CI 3 P. Kornprobst, R. Deriche, and G. Aubert. Image coupling, restoration and enhancement via PDEs. In *Proceedings of the 4th International Conference on Image Processing*, volume 4, pages 458–461. IEEE Computer Society Press, October 1997.
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- CI 13 P. Kornprobst, T. Viéville, and I. Dimov. Could early visual processes be sufficient to label motions? In *International Joint Conference on Neural Networks*, 2005.
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- CI 16 T. Viéville and P. Kornprobst. Modeling cortical maps with feed-backs. In *International Joint Conference on Neural Networks*, Vancouver, 2006.
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- CI 26 W. Bel Haj Ali, Eric Debreuve, Pierre Kornprobst, and Michel Barlaud. Bio-inspired bags-of-features for image classification. In *KDIR International Conference on Knowledge Discovery and Information Retrieval*, October 2011.
- CI 27 Emilien Tlapale, Pierre Kornprobst, Guillaume Masson, and Olivier Faugeras. A neural field model for motion estimation. In Springer, editor, *Mathematical Image Processing*, volume 5 of *Springer Proceedings in Mathematics*, pages 159–180, 2011.
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- CH 2 Gilles Aubert and Pierre Kornprobst. *Mathematical problems in image processing: partial differential equations and the calculus of variations (Second edition)*, volume 147 of *Applied Mathematical Sciences*. Springer-Verlag, 2006.
- CH 3 T. Brox, R. van den Boomgaard, F. Lauze, J. van de Weijer, J. Weickert, P. Mrázek, and P. Kornprobst. Adaptive structure tensors and their applications. In J. Weickert and H. Hagen, editors, *Visualization and Processing of Tensor Fields*, pages 19–47. Springer, 2006.

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- RR 2 P. Kornprobst, R. Deriche, and G. Aubert. Image coupling, restoration and enhancement via PDEs. In *International Conference Image Processing, Oct. 1997.*, volume 4, pages 458–461, October 1997.
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