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Yvain QUÉAU

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List of publications

My research works have been presented to the following scientific communities:

Computer vision:

- Conferences: CVPR, ICCV, BMVC, WACV (major vision conferences, acceptance rate $< 30\%$) and QCAV (specialized thematic conference)
- Journals: Image Vis. Comp., Sig. Proc.: Image Comm. (Elsevier, impact factor > 2) and Comp. Vis. Media (Springer “open access” journal)

Mathematical imaging:

- Conferences: SSVM, EMMCVPR and ALGORITHMY (specialized thematic conferences, acceptance rate $\approx 70\%$)
- Journals: J. Imag. Sci. (SIAM, impact factor > 2) and J. Math. Imag. Vis. (Springer, impact factor > 2)

French signal processing community:

- Conferences: RFIA, GRETSI, ORASIS et CORESA
- Journal: Traitement du Signal (Lavoisier)

- [T1] **Y. Quéau**. “Reconstruction tridimensionnelle par stéréophotométrie”. Thèse de doctorat. Université de Toulouse, 2015. 308 pp. URL: <https://hal.archives-ouvertes.fr/tel-01261526>. (**Léopold Escande 2016 award**).

 Journal articles

- [R10] **Y. Quéau**, J.-D. Durou, and J.-F. Aujol. “Variational Methods for Normal Integration”. *Journal of Mathematical Imaging and Vision* (2017). Springer, 24 p. URL: <https://dx.doi.org/10.1007/s10851-017-0777-6>. (to appear).
- [R9] **Y. Quéau**, J.-D. Durou, and J.-F. Aujol. “Normal Integration: A Survey”. *Journal of Mathematical Imaging and Vision* (2017). Springer, 18 p. URL: <https://dx.doi.org/10.1007/s10851-017-0773-x>. (to appear).
- [R8] **Y. Quéau**, B. Durix, T. Wu, D. Cremers, F. Lauze, and J.-D. Durou. “LED-based Photometric Stereo: Modeling, Calibration and Numerical Solution”. *Journal of Mathematical Imaging and Vision* (2017). Springer, 28 p. URL: <http://dx.doi.org/10.1007/s10851-017-0761-1>. (to appear).
- [R7] **Y. Quéau**, B. Durix, T. Lucas, J. Boumazza, J.-D. Durou, and F. Lauze. “Fusion de données RVB-D par stéréophotométrie colorée”. *Traitement du Signal* (2017). Lavoisier, 23 p. URL: <https://hal.archives-ouvertes.fr/hal-01409663v1>. (in French, to appear).
- [R6] **Y. Quéau**, R. Mecca, J.-D. Durou, and X. Descombes. “Photometric Stereo with Only Two Images: A Theoretical Study and Numerical Resolution”. *Image and Vision Computing* 57 (2017). Elsevier, pp. 175–191. URL: <https://doi.org/10.1016/j.imavis.2016.11.006>. (**Editor’s choice**).
- [R5] M. Bähr, M. Breuss, **Y. Quéau**, A. S. Boroujerdi, and J.-D. Durou. “Fast and Accurate Surface Normal Integration on Non-Rectangular Domains”. *Computational Visual Media* 3.2 (2017). Springer, pp. 107–129. URL: <https://doi.org/10.1007/s41095-016-0075-z>.
- [R4] R. Mecca, **Y. Quéau**, F. Logothetis, and R. Cipolla. “A Single Lobe Photometric Stereo Approach for Heterogenous Material”. *SIAM Journal on Imaging Sciences* 9.4 (2016). SIAM, pp. 1858–1888. URL: <https://doi.org/10.1137/16M1068177>.
- [R3] **Y. Quéau**, R. Modrzejewski, P. Gurdjos, and J.-D. Durou. “A full photometric and geometric model for attached webcam/matte screen devices”. *Signal Processing: Image Communication* 40 (2016). Elsevier, pp. 65–81. URL: <https://doi.org/10.1016/j.image.2015.11.006>.
- [R2] **Y. Quéau**, F. Lauze, and J.-D. Durou. “Solving Uncalibrated Photometric Stereo using Total Variation”. *Journal of Mathematical Imaging and Vision* 52.1 (2015). Springer, pp. 87–107. URL: <https://doi.org/10.1007/s10851-014-0512-5>.
- [R1] **Y. Quéau**, J.-D. Durou, B. Durix, and V. Charvillat. “Stéréophotométrie non calibrée en présence d’écarts au modèle lambertien”. *Traitement du Signal* 31.1-2 (2014). Lavoisier, pp. 107–141. URL: <http://oatao.univ-toulouse.fr/13008/>. (in French).

 Peer-reviewed proceedings of international conferences

- [C16] **Y. Quéau**, J. Mélou, F. Castan, D. Cremers, and J.-D. Durou. “A Variational Approach to Shape-from-shading Under Natural Illumination”. *Energy Minimization Methods for Computer Vision and Pattern Recognition (EMMCVPR)*. Springer. Venice, Italy, 2017. URL: <https://arxiv.org/abs/1709.10354>. 16 p. (to appear).
- [C15] S. Peng, B. Häfner, **Y. Quéau**, and D. Cremers. “Depth Super-Resolution Meets Uncalibrated Photometric Stereo”. *The IEEE International Conference on Computer Vision (ICCV)*. IEEE. Venice, Italy, 2017, pp. 2961–2968. URL: http://openaccess.thecvf.com/content_ICCV_2017_workshops/w43/html/Peng_Depth_Super-Resolution_Meets_ICCV_2017_paper.html.
- [C14] **Y. Quéau**, T. Wu, F. Lauze, J.-D. Durou, and D. Cremers. “A Non-Convex Variational Approach to Photometric Stereo under Inaccurate Lighting”. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. IEEE. Honolulu, USA, 2017, pp. 350–359. URL: <https://doi.org/10.1109/CVPR.2017.45>.

- [C13] **Y. Quéau**, T. Wu, and D. Cremers. “Semi-Calibrated Near-Light Photometric Stereo”. *International Conference on Scale Space and Variational Methods in Computer Vision (SSVM)*. Vol. 10302. Lecture Notes in Computer Science. Springer. Kolding, Denmark, 2017, pp. 656–668. URL: https://doi.org/10.1007/978-3-319-58771-4_52.
- [C12] F. Lauze, **Y. Quéau**, and H.-O. Sorensen. “Simultaneous Reconstruction and Segmentation of CT Scans with Shadowed Data”. *International Conference on Scale Space and Variational Methods in Computer Vision (SSVM)*. Vol. 10302. Lecture Notes in Computer Science. Springer. Kolding, Denmark, 2017, pp. 308–319. URL: https://doi.org/10.1007/978-3-319-58771-4_25.
- [C11] J. Mélou, **Y. Quéau**, J.-D. Durou, F. Castan, and D. Cremers. “Beyond Multi-view Stereo: Shading-Reflectance Decomposition”. *International Conference on Scale Space and Variational Methods in Computer Vision (SSVM)*. Vol. 10302. Lecture Notes in Computer Science. Springer. Kolding, Denmark, 2017, pp. 694–705. URL: https://doi.org/10.1007/978-3-319-58771-4_55. **(Selected for publication of an extended version in Journal of Mathematical Imaging and Vision)**.
- [C10] **Y. Quéau**, M. Pizenberg, J.-D. Durou, and D. Cremers. “Microgeometry capture and RGB albedo estimation by photometric stereo without demosaicing”. *International Conference on Quality Control by Artificial Vision (QCAV)*. Vol. 1338. Proceedings of SPIE. SPIE Digital Library. Tokyo, Japan, 2017. URL: <http://dx.doi.org/10.1117/12.2266080>. 7 p.
- [C9] **Y. Quéau**, R. Mecca, and J.-D. Durou. “Unbiased Photometric Stereo for Colored Surfaces: A Variational Approach”. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. IEEE. Las Vegas, USA, 2016, pp. 4359–4368. URL: <https://doi.org/10.1109/CVPR.2016.472>.
- [C8] L. Hoeltgen, **Y. Quéau**, M. Breuß, and G. Radow. “Optimised photometric stereo via non-convex variational minimisation”. *British Machine Vision Conference (BMVC)*. BMVA Press. York, United Kingdom, 2016, pp. 36.1–36.12. URL: <http://www.bmva.org/bmvc/2016/papers/paper036/>.
- [C7] F. Logothetis, R. Mecca, **Y. Quéau**, and R. Cipolla. “Near-Field Photometric Stereo in Ambient Light”. *British Machine Vision Conference (BMVC)*. BMVA Press. York, United Kingdom, 2016, pp. 61.1–61.12. URL: <http://www.bmva.org/bmvc/2016/papers/paper061/>.
- [C6] R. Mecca and **Y. Quéau**. “Unifying diffuse and specular reflections for the photometric stereo problem”. *IEEE Winter Conference on Applications of Computer Vision (WACV)*. IEEE. Lake Placid, USA, 2016, pp. 1–9. URL: <https://doi.org/10.1109/WACV.2016.7477643>.
- [C5] M. Breuß, **Y. Quéau**, M. Bähr, and J.-D. Durou. “Highly Efficient Surface Normal Integration”. *Algorithmy Conference on Scientific Computing (ALGORITMY)*. Slovak University of Technology. Podbanske, Slovakia, 2016, pp. 204–213. URL: <http://www.iam.fmph.uniba.sk/amuc/ojs/index.php/algoritmy/article/view/409>.
- [C4] **Y. Quéau**, F. Lauze, and J.-D. Durou. “A L1-TV Algorithm for Robust Perspective Photometric Stereo with Spatially-Varying Lightings”. *International Conference on Scale Space and Variational Methods in Computer Vision (SSVM)*. Vol. 9087. Lecture Notes in Computer Science. Springer. Lège Cap-Ferret, France, 2015, pp. 498–510. URL: https://doi.org/10.1007/978-3-319-18461-6_40.
- [C3] **Y. Quéau** and J.-D. Durou. “Edge-Preserving Integration of a Normal Field: Weighted Least Squares, TV and L1 Approaches”. *International Conference on Scale Space and Variational Methods in Computer Vision (SSVM)*. Vol. 9087. Lecture Notes in Computer Science. Springer. Lège Cap-Ferret, France, 2015, pp. 576–588. URL: https://doi.org/10.1007/978-3-319-18461-6_46.
- [C2] **Y. Quéau** and J.-D. Durou. “Some Illumination Models for Industrial Applications of Photometric Stereo”. *International Conference on Quality Control by Artificial Vision (QCAV)*. Vol. 9534. Proceedings of SPIE. SPIE Digital Library. Le Creusot, France, 2015. URL: <http://dx.doi.org/10.1117/12.2182921>. 7 p.
- [C1] **Y. Quéau**, F. Lauze, and J.-D. Durou. “Solving the Uncalibrated Photometric Stereo Problem using Total Variation”. *International Conference on Scale Space and Variational Methods in Computer Vision (SSVM)*. Vol. 7893. Lecture Notes in Computer Science. Springer. Schloss Seggau, Austria, 2013, pp. 270–281. URL: https://doi.org/10.1007/978-3-642-38267-3_23.

- [CF10] **Y. Quéau**, M. Pizenberg, D. Cremers, and J.-D. Durou. “Stéréophotométrie microscopique sans démosaïquage”. *Colloque GRETSI*. Juan-les-Pins, France, 2017. URL: https://vision.in.tum.de/_media/spezial/bib/gretsifr.pdf. 4 p.
- [CF9] J. Mélou, **Y. Quéau**, J.-D. Durou, F. Castan, and D. Cremers. “Estimation de la réflectance à partir de données multi-vues”. *Congrès ORASIS des jeunes chercheurs en vision par ordinateur*. AFRIF. Colleville-sur-Mer, France, 2017. URL: https://www.irit.fr/~Jean-Denis.Durou/PUBLICATIONS/orasis_2017.pdf. 8 p.
- [CF8] **Y. Quéau**, B. Durix, T. Lucas, J. Boumaza, J.-D. Durou, and F. Lauze. “Fusion de données RVB-D par stéréophotométrie colorée”. *Congrès francophone de reconnaissance des formes et intelligence artificielle (RFIA)*. AFRIF-AFIA. Clermont-Ferrand, France, 2016. URL: <http://rfia2016.iut-auvergne.com/media/articles/CPV03.pdf>. 8 p. **(Selected for publication of an extended version in *Traitement du Signal*)**.
- [CF7] B. Durix, **Y. Quéau**, T. Lucas, J. Boumaza, J.-D. Durou, and F. Lauze. “Étalonnage de sources lumineuses de type LED”. *Congrès francophone de reconnaissance des formes et intelligence artificielle (RFIA)*. AFRIF-AFIA. Clermont-Ferrand, France, 2016. URL: <http://rfia2016.iut-auvergne.com/media/articles/CPV02.pdf>. 8 p.
- [CF6] **Y. Quéau**, J.-D. Durou, and X. Descombes. “Que peut-on apprendre d’une scène vue par une webcam à partir d’images prises au cours d’une journée ensoleillée ?” *Congrès ORASIS des jeunes chercheurs en vision par ordinateur*. AFRIF. Amiens, France, 2015. URL: <https://hal.archives-ouvertes.fr/hal-01161843>. 8 p.
- [CF5] **Y. Quéau** and J.-D. Durou. “Intégration d’un champ de gradient rapide et robuste aux discontinuités - Application à la stéréophotométrie”. *Congrès francophone de reconnaissance des formes et intelligence artificielle (RFIA)*. AFRIF-AFIA. Rouen, France, 2014. URL: <https://hal.archives-ouvertes.fr/hal-00989064/>. 8 p.
- [CF4] **Y. Quéau**, R. Modrzejewski, P. Gurdjos, and J.-D. Durou. “Transformation d’un dispositif multi-média webcam-écran en un scanner 3D”. *Compression et REprésentation des Signaux Audiovisuels (CORESA)*. IUT de Reims. Reims, France, 2014. URL: <https://hal.archives-ouvertes.fr/hal-01120851>. 6 p. **(Best presentation award - Selected for publication of an extended version in *Signal Processing: Image Communications*)**.
- [CF3] **Y. Quéau** and J.-D. Durou. “Résolution du problème de la stéréophotométrie non calibrée par estimation de l’intensité des éclairages”. *Congrès ORASIS des jeunes chercheurs en vision par ordinateur*. AFRIF. Cluny, France, 2013. URL: <https://hal.archives-ouvertes.fr/hal-00829380/>. 8 p. **(Selected for publication of an extended version in *Traitement du Signal*)**.
- [CF2] B. Durix, **Y. Quéau**, V. Charvillat, and J.-D. Durou. “Quels prétraitements pour la stéréophotométrie non calibrée ?” *Congrès ORASIS des jeunes chercheurs en vision par ordinateur*. AFRIF. Cluny, France, 2013. URL: <http://oatao.univ-toulouse.fr/12506/>. 8 p.
- [CF1] J.-D. Durou, **Y. Quéau**, and V. Charvillat. “Résolution de la stéréophotométrie par apprentissage”. *Congrès francophone de reconnaissance des formes et intelligence artificielle (RFIA)*. AFRIF-AFIA. Lyon, France, 2012. URL: https://www.irit.fr/~Jean-Denis.Durou/PUBLICATIONS/rfia_2012.pdf. 8 p.

Journal articles currently under review

- [P2] J. Mélou, **Y. Quéau**, J.-D. Durou, F. Castan, and D. Cremers. “Variational Reflectance Estimation from Multi-view Images”. 20 p. URL: <https://arxiv.org/abs/1709.08378>. In revision (JMIV).
- [P1] G. Radow, L. Hoeltgen, **Y. Quéau**, and M. Breuß. “Optimisation of photometric stereo methods by non-convex variational minimisation”. 18 p. URL: <https://arxiv.org/abs/1709.10437>. In revision (JMIV).