– Olivier LALIGANT, Prof. – Brief CV –

olivier.laligant@u-bourgogne.fr

- Born in France
- Full Professor at the University of Burgundy
- Research with ImViA Lab (Computer vision)
- Main research interests : edge detection, noise estimation
- Address: IUT, Campus, 71200 Le Creusot, France

Education

- Habilitation à Diriger les Recherches, 2004.
  Jury: MM A. Baskurt (R), Ph. Bolon (R), A. Diou, J.C. Pesquet (R), F. Truchetet, (M. Unser (R)).
- PhD Thesis, 1995, Univ. of Burgundy
- Master in Robotics, 1992, Pierre et Marie Curie University, Paris VI

Service

- Head of the Campus des Métiers et Qualification *Industrie Technologique Innovante et Performante* (CMQ ITIP – growing interaction network between education-research and economy), since Sep. 2017
- Head of the Institute of Technology (100 employees, 700 students), Le Creusot, Jan. 2015 – Dec. 2019
- Co-director of the Doctoral School SPIM (Sciences for engineers – 450 PhD students), Jan 2012 - Déc. 2014
- Head of the department "Measures in Physics" (associate degree – 10 permanent teachers and 120 students), Institute of Technology, 2004-2007
- Creation of three new educational programs (two national diplomas), 2007, 2016 and 2019

Teaching

- "Advanced Image Analysis/Edge detection" international Master MSC since 2007
- "Image processing" licence professionnelle *ContrÃ'le Industriel par Vision Artificielle*, from 2003 til 2012
- "Edge detection", Master in Computer Science and Computer Vision, 2002 to 2010
- "Statistics", "probabilities", "signal processing", "acoustics", DUT Mesures Physiques, since 2005

Awards and Achievements

- New university education with innovative pedagogy (#ICI Course and Bachelor Smart Innovative Project – SIP)
- Higher Education Minister's National award (international jury) in innovative pedagogy (PEPS 2018) for #ICI and regional award for the Bachelor SIP
- National label of *excellence* (2020) for the CMQ ITIP (see Service)
- National grant (2M€) for an innovative project in pedagogy and strong interactions between education-research and economy (2020)

Some research activities

- *Invited speaker* 5th International Conference on Computational Harmonic Analysis, Nashville, TN, USA, Mai 2014.
- Co-chairman of the conferences colloque *Wavelet applications in industrial processing*, SPIE, USA, 2004 to 2009
- "Reviewer" pour *Optical Engineering*, *Electronic Imaging*, *IEEE Medical Imaging*, *IEEE Image Processing*, *IEEE Signal Processing*, *EURASIP*, ...

Applications

- Technology Transfer contracts with companies – Usinor (2002): image segmentation, SEB (2014) : signal processing for 1D sensors, HOLDING CASSIER SAS 58340 Cercy-la-Tour (2017) : image processing for visual inspection of tires.
- CNRS education "Advanced tools for industrial vision"
- CIFRE PhD Theses (companies Alitheon Lyon, MSC-SGCC Lyon)

Patent

- FR1358355 - Méthode et dispositif de détermination de la position et de l'orientation d'une surface spéculaire formant un dioptre – Drouet F., Leconte M. (MSC-SGCC), Colle O. (MSC-SGCC), Laligant O., Aubreton O., Stolz C. (2014).

Some publications in journals

1. H. A. Khan, J.-B. Thomas, J. Y. Hardeberg, O. Laligant. "Multispectral camera as spatio-spectrophotometer under uncontrolled illumination", Optics Express, Optical Society of America, 27 (2), pp.1051-1070, 2019.
2. H.A. Khan, J.B. Thomas, J.Y. Hardeberg, O. Laligant, "Illuminant estimation in multispectral imaging", JOSA A 34 (7), 1085-1098, 2017
3. Q. Lu, E. Fauvet, A. Zakharova, O. Laligant, "Entire reflective object surface structure understanding based on reflection motion estimation", Pattern Recognition Letters, Volume 68, pp. 176-182, Part 1, 15 December 2015.
4. F. Drouet, C. Stolz, O. Laligant, and O. Aubreton, " 3D reconstruction of external and internal surfaces of transparent objects from polarization state of highlights", *Optics Letters*, Vol. 39, No. 11, June 1, 2014
5. O. Laligant, F. Truchetet, E. Fauvet. "Noise Estimation From Digital Step-Model Signal", IEEE Trans. Image Processing, vol. 22, no.12, pp.5158–5167, Dec. 2013.
6. B. Jalil, E. Fauvet, O. Laligant, "Signal Restoration via a Splitting Approach", EURASIP Journal on Advances in Signal Processing, 2012:38.
7. B. Jalil, O. Beya, E. Fauvet, O. Laligant, "Sub Signal based Denoising from Piecewise Linear or Constant Signal", Optical Engineering. Vol. 50, No. 11, 2011.
8. I. Lertrusdachakul, Y. Fougerolle, O. Laligant, "Dynamic (de)-focused projection for three dimensional reconstruction", Optical Engineering 50, 11 (2011) 113201.
9. O. Laligant, F. Truchetet, "A nonlinear derivative scheme applied to edge detection", IEEE PAMI, vol. 32, no. 2, pp. 242-257, Feb. 2010.
10. F. Truchetet, O. Laligant, "A review on Industrial applications of wavelet and multiresolution based signal-image processing", Journal of Electronic Imaging, 2008.
11. M. Lemaître, O. Laligant, J. Blanc-Talon, and F. Mériaudeau. "Restoration of Videos Degraded by Local Isoplanatism Effects in the Near-Infrared Domain". ELCVIA, 7(3):83-92, 2008.
12. O. Laligant, F. Truchetet and F. Mériaudeau. "Regularization preserving localization of close edges". IEEE Signal Processing Letters, Mars 2007
13. F. Truchetet, O. Laligant, "Optical tomography from focus", Optics Express, 15 (12), pp. 7381-7392, June 2007