

- Born in France
- Full Professor at the University of Burgundy
- Research with ViBot ERL CNRS 6000 (Vision for Robotics)
- Main research interests : edge detection, noise estimation
- Address: IUT, Campus, 71200 Le Creusot, France

Education

- Habilitation à Diriger les Recherches le 22/12/2004.
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 educational programs (two national diplomas), 2007, 2016 and 2019

Teaching

- "Advanced Image Analysis/Edge detection" international Master MSC since 2007
- "Image processing" licence professionnelle *Contrôle 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)

Patents

- 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. Lertrudachakul, 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