

Publications, Presentations & Supervised Theses

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Part I.

PhD Thesis supervision

Ongoing PhD students

- T24** *Bernardin Tamo Amougou* (Heriot-Watt University 2023-2026)
Co-encadrée à 33% avec Marcelo Pereyra & Julie Delon.
Stochastic quantitative imaging methods with data-driven priors encoded by neural networks.
Bourse Heriot-Watt
- T23** *Charles Laroche* (GoPro/Université Paris Cité 2021-2024)
Co-encadrée à 50% avec Eva Coupété – GoPro.
Apprentissage profond pour la restauration d'images pour la photographie numérique
Bourse CIFRE
- T22** *Nicolas Cherel* (Telecom Paris 2020-2023)
Co-encadré à 33% avec Y. Gousseau et A. Newson
Video inpainting using patch-based and deep learning methods
Bourse IMT Futures & Ruptures
- T21** *Jean Prost* (U. Bordeaux 2020-2023)
Co-encadré à 50% avec N. Papadakis
Image Restoration with Semantic Priors
Bourse ANR PostProdLEAP
- T20** *Varvara Chiliaeva* (ONERA 2020-2023)
Co-encadrée à 33% avec Y. Ferrec et F. Goudail
Cubes hyperspectraux d'imageurs à transformée de Fourier
Bourse ONERA + Thales

Former PhD students

- T19** *Rémi Laumont* (Université Paris Cité 2019-2022)
Co-encadré à 33% avec J. Delon & M. Pereyra
Bayesian computation with Plug & Play priors for inverse problems in imaging sciences. [\[PDF\]](#)
Bourse FSMP - DIM MathInnov
A présent postdoc à la DTU (technical University of Denmark), Copenhagen
- T18** *Mario González* (cotutelle Université de Paris - Universidad de la República 2017-2021)
Co-encadré à 50% avec P. Musé (UdelaR)
Bayesian Plug & Play Methods for Inverse Problems in Imaging [\[PDF\]](#)
Bourse ANII + EIFFEL.
A présent ingénieur science de données chez MERCADO LIBRE
- T17** *Marcela Carvalho* (ONERA 2016-2019)
Co-encadrée à 25% avec F. Champagnat, P. Trouvé, B. Le Saux
Deep depth from defocus : Neural networks for monocular depth estimation. [\[PDF\]](#)
Bourse ONERA.
A présent head of AI chez UPCITI

- T16** *Thuc Trinh Le* (Telecom ParisTech 2015-2019)
 Co-encadré à 33% avec Y. Gousseau et S. Masnou (Univ. de Lyon 1)
 "Video inpainting and semi-supervised object removal". [\[PDF\]](#)
 Bourse ANR MIRIAM
 A présent ingénieur de recherche chez STORELIFT
- T15** *Antoine Houdard* (Telecom ParisTech 2015-2019)
 Co-encadré à 50% avec Julie Delon (Univ. Paris-Descartes)
 Some advances in patch-based image denoising [\[PDF\]](#)
 Bourse d'excellence "Futur & Ruptures" de la Fondation Mines-Telecom.
 3ème prix des thèses Telecom ParisTech
 A présent ingénieur de recherche chez UBISOFT Bordeaux.
- T14** *Clara Barbanson* (Onera / Telecom ParisTech 2014-2018)
 Co-encadré à 50% avec Y. Ferrec et P. Monasse
 Correction des effets de relief en spectroimagerie aéroportée. [\[PDF\]](#)
 à présent image processing engineer with Safran Electronics & Defense.
- T13** *Paul Riot* (Telecom ParisTech 2014-2018)
 Co-encadré à 30% avec Yann Gousseau et Florence Tupin
 Residual whiteness for image denoising. [\[PDF\]](#)
- T10** *Antoine Deblonde* (Morpho / Telecom ParisTech 2011-2014)
 Co-encadré à 50% avec Said Ladjal
 Algorithmes rapides et fiables pour l'indexation et recherche d'images d'empreintes digitales latentes.
- T9** *Yann Traonmilin* (Telecom ParisTech 2011-2014)
 Co-encadré à 50% avec Said Ladjal.
 Relations entre le modèle d'image et le nombre de mesures pour une super-résolution fidèle
[\[PDF\]](#)
 à présent chargé de recherche CNRS.
- T8** *Javier Preciozzi* (UdelaR-IIIE 2011-2017)
 Co-encadré à 50% avec Pablo Musé.
 Two Restoration Problems In Satellite Imaging. [\[URL\]](#)
 à présent PDG et co-fondateur chez <https://digitalsense.ai/>
- T7** *Alasdair Newson* (Technicolor/ Telecom ParisTech 2011-2013)
 Co-encadré à 30% avec Yann Gousseau et Patrick Perez.
 On Video Completion : Line Scratch Detection and Video Inpainting of Complex Scenes.
[\[PDF\]](#)
 à présent Maître de Conférences à Sorbonne Université, Paris, France.
- T6** [Thierry Guillemot](#) (Telecom ParisTech 2010-2013),
 co-encadré à 50% avec Tamy Boubekeur,
 Méthodes et Structures Non Locales pour la Restauration d'Images et de Surfaces 3D [\[URL\]](#)
 à présent Ingénieur recherche en machine learning chez ARIADNEXT.
- T5** [Mauricio Delbracio](#) (ENS Cachan & UdelaR 2009-2012).
 Co-encadré à 30% avec JM Morel et P. Musé.
 "Two Problems of Digital Image Formation: Recovering the Camera Point Spread Function

and Boosting Stochastic Renderers by Auto-similarity Filtering” [\[URL\]](#)
à présent Chercheur Senior chez Google Research, Mountain View, CA.

T4 [Julien Caron](#) (Univ. Picardie 2008-2012).

Co-encadré à 50% avec Sylvain Durand.

Restauration en échantillonnage irrégulier : Théorie et applications aux signaux et images satellitaires [\[URL\]](#)

A présent Ingénieur Logiciel chez General Electrics Healthcare, Ile de France, France

T3 [Eric Bughin](#) (ENS Cachan 2007-2011).

Encadré à 100%

”Vers une vectorisation précise, automatique et validée en stéréoscopie satellitaire en milieu urbain” [\[URL\]](#)

A présent Camera HW Image Quality Manager at Apple, Cupertino, CA, US.

T2 [Mariano Tepper](#) (Univ de Buenos Aires 2007-2011).

Co-encadré à 30% avec M. Mejail et P. Musé.

”Detecting clusters and boundaries: a twofold study on shape representation” [\[PDF\]](#)

à présent Research Scientist in Machine Learning at Intel Labs, New York, US.

T1 *Neus Sabater* (ENS Cachan 2006-2009).

Co-encadrée à 50% avec JM. Morel

”Fiabilité et précision en stéréoscopie : application à l’imagerie aérienne et satellitaire à haute résolution” [\[URL\]](#)

à présent Senior Scientist in Computer Vision chez InterDigital, Rennes, France.

Visiting PhD students

T11 *Matias di Martino* (UdelaR, Uruguay)

Encadré à 100% pendant 6 mois de séjour doctoral à Telecom ParisTech en 2013.

Hybrid optical/digital methods for image acquisition.

T12 *Raghavendra Bhalerao* (IIT, India)

Encadré à 100% pendant 6 mois de séjour doctoral à Telecom ParisTech en 2012.

Low baseline multi-stereo.

Postdocs

F1 *Thierry Guillemot* (LTCI 2014)

Covariance trees for image and surface reconstruction.

F2 *Alasdair Newson* (MAP5/LTCI 2017-2018)

Deep Learning for Computational Photography.

F3 *Yassine Mhiri* (MAP5 2023-2024)

Reconstruction of hyperspectral images from interferometric measurements.

Part II.

Publications

Preprints and Submitted Articles

- [P7] Nicolas Cherel, Andrés Almansa, Yann Gousseau, and Alasdair Newson. Infusion: Internal Diffusion for Video Inpainting. pages 1–12, 2023. [\[arXiv:2311.01090\]](#), [\[hal-04307853\]](#).
- [P6] Marien Renaud, Jiaming Liu, Valentin de Bortoli, Andrés Almansa, and Ulugbek S. Kamilov. Plug-and-Play Posterior Sampling under Mismatched Measurement and Prior Models. pages 1–28, 2023. [\[arXiv:2310.03546\]](#).
- [P5] Jean Prost, Antoine Houdard, Nicolas Papadakis, and Andrés Almansa. Diverse super-resolution with pretrained deep hierarchical VAEs. [\[hal-03675314\]](#), may 2022.
- [P4] Antoine Monod, Julie Delon, Matias Tassano, and Andrés Almansa. Video Restoration with a Deep Plug-and-Play Prior. [\[hal-03787318\]](#), sep 2022.
- [P3] Warith Harchaoui, Pierre-Alexandre Mattei, Andrés Almansa, and Charles Bouveyron. Wasserstein Adversarial Mixture Clustering. may 2018. [\[hal-01827775\]](#).
- [P2] Yann Traonmilin, Saïd Ladjal, and Andrés Almansa. On the amount of regularization for super-resolution reconstruction. submitted, [\[hal-00763984\]](#), December 2012.
- [P1] Mariano Tepper, Pablo Musé, and Andrés Almansa. Meaningful clustered forest: an automatic and robust clustering algorithm. submitted, [\[Preprint\]](#), July 2011.

International Peer-Reviewed Journals

- [J35] Nicolas Cherel, Andrés Almansa, Yann Gousseau, and Alasdair Newson. Patch-Based Stochastic Attention for Image Editing. (*CVIU*) *Computer Vision and Image Understanding*, 2023. [DOI: 10.1016/j.cviu.2023.103866](#), to appear, [\[hal-03613698\]](#), [\[arXiv:2202.03163\]](#).
- [J34] Rémi Laumont, Valentin De Bortoli, Andrés Almansa, Julie Delon, Alain Durmus, and Marcelo Pereyra. On Maximum a Posteriori Estimation with Plug & Play Priors and Stochastic Gradient Descent. *Journal of Mathematical Imaging and Vision*, 65(1):140–163, jan 2023. ISSN 0924-9907. [DOI: 10.1007/s10851-022-01134-7](#), [\[hal-03348735\]](#), [\[arXiv:2201.06133\]](#).
- [J33] Rémi Laumont, Valentin de Bortoli, Andrés Almansa, Julie Delon, Alain Durmus, Marcelo Pereyra, Valentin De Bortoli, Andrés Almansa, Julie Delon, Alain Durmus, and Marcelo Pereyra. Bayesian imaging using Plug & Play priors: when Langevin meets Tweedie. *SIAM Journal on Imaging Sciences*, 15(2):701–737, mar 2022. ISSN 1936-4954. [DOI: 10.1137/21M1406349](#). [\[hal-03161400\]](#), [\[arXiv:2103.04715\]](#).
- [J32] Mario González, Andrés Almansa, and Pauline Tan. Solving Inverse Problems by Joint Posterior Maximization with Autoencoding Prior. *SIAM Journal on Imaging Sciences*, 15(2):822–859, jun 2022. ISSN 1936-4954. [DOI: 10.1137/21M140225X](#). [\[arXiv:2103.01648\]](#), [\[hal-03151455\]](#).

- [J31] Marcela Carvalho, Bertrand Le Saux, Pauline Trouve-Peloux, Frederic Champagnat, and Andres Almansa. Multitask Learning of Height and Semantics from Aerial Images. *IEEE Geoscience and Remote Sensing Letters*, 17(8):1391–1395, aug 2020. ISSN 15580571. [DOI:10.1109/LGRS.2019.2947783](https://doi.org/10.1109/LGRS.2019.2947783). [\[hal-02386074\]](#), [\[arXiv:1911.07543\]](#), [\[code\]](#).
- [J30] Alasdair Newson, Andrés Almansa, Yann Gousseau, and Saïd Ladjal. Processing Simple Geometric Attributes with Autoencoders. *Journal of Mathematical Imaging and Vision*, 62(3):293–312, apr 2020. ISSN 0924-9907. [DOI:10.1007/s10851-019-00924-w](https://doi.org/10.1007/s10851-019-00924-w). [\[arXiv:1904.07099\]](#), [\[hal-02271281\]](#).
- [J29] Thuc Trinh Le, Andrés Almansa, Yann Gousseau, and Simon Masnou. Object removal from complex videos using a few annotations. *Computational Visual Media*, 5(3):267–291, sep 2019. ISSN 2096-0433. [DOI:10.1007/s41095-019-0145-0](https://doi.org/10.1007/s41095-019-0145-0). [\[demo\]](#), [\[hal-02168653\]](#).
- [J28] Cecilia Aguerrebere, Andres Almansa, Julie Delon, Yann Gousseau, and Pablo Muse. A Bayesian Hyperprior Approach for Joint Image Denoising and Interpolation, With an Application to HDR Imaging. *IEEE Transactions on Computational Imaging*, 3(4):633–646, dec 2017. ISSN 2333-9403. [DOI:10.1109/TCI.2017.2704439](https://doi.org/10.1109/TCI.2017.2704439). [\[hal-01107519\]](#).
- [J27] Daniel-Chen Soncco, Clara Barbanson, Mila Nikolova, Andres Almansa, and Yann Ferrec. Fast and Accurate Multiplicative Decomposition for Fringe Removal in Interferometric Images. *IEEE Transactions on Computational Imaging*, 3(2):187–201, jun 2017. ISSN 2333-9403. [DOI:10.1109/TCI.2017.2678279](https://doi.org/10.1109/TCI.2017.2678279). [\[hal-01492428\]](#).
- [J26] Javier Preciozzi, Andrés Almansa, Pablo Musé, Sylvain Durand, Ali Khazaal, and Bernard Rougé. A Sparsity-Based Variational Approach for the Restoration of SMOS Images From L1A Data. *IEEE Transactions Geosciences and Remote Sensing*, 55(5):2811–2826, feb 2017. ISSN 0196-2892. [DOI:10.1109/TGRS.2017.2654864](https://doi.org/10.1109/TGRS.2017.2654864). [\[hal-01341839\]](#).
- [J25] Antoine Houdard, Andrès Almansa, and Julie Delon. Demystifying the asymptotic behavior of global denoising. *Journal of Mathematical Imaging and Vision*, 59(3):456–480, 2017. [DOI:10.1007/s10851-017-0716-6](https://doi.org/10.1007/s10851-017-0716-6). [\[hal-01340822\]](#).
- [J24] Alasdair Newson, Andrés Almansa, Yann Gousseau, and Patrick Pérez. Non-Local Patch-Based Image Inpainting. *Image Processing On Line*, 7:373–385, 2017. [DOI:10.5201/ipol.2017.189](https://doi.org/10.5201/ipol.2017.189).
- [J23] Yann Traonmilin, Saïd Ladjal, and Andrés Almansa. Robust Multi-image Processing With Optimal Sparse Regularization. *Journal of Mathematical Imaging and Vision*, 51(3):413–429, 2015. [DOI:10.1007/s10851-014-0532-1](https://doi.org/10.1007/s10851-014-0532-1). [\[Preprint\]](#).
- [J22] Alasdair Newson, Andrés Almansa, Matthieu Fradet, Yann Gousseau, and Patrick Pérez. Video Inpainting of Complex Scenes. *SIIMS - SIAM Journal on Imaging Sciences*, 7(4):1993–2019, January 2014a. [DOI:10.1137/140954933](https://doi.org/10.1137/140954933). [\[Demo\]](#)[\[Preprint\]](#).
- [J21] Alasdair Newson, Andres Almansa, Yann Gousseau, and Patrick Perez. Robust Automatic Line Scratch Detection in Films. *IEEE Transactions on Image Processing*, 23(3):1240–1254, March 2014b. ISSN 1057-7149. [DOI:10.1109/TIP.2014.2300824](https://doi.org/10.1109/TIP.2014.2300824). [\[Demo\]](#) [\[hal-00927007\]](#).
- [J20] Mariano Tepper, Pablo Musé, Andrés Almansa, and Marta Mejail. Finding contrasted and regular edges by a contrario detection of periodic subsequences. *Pattern Recognition*, 47(1):72–79, January 2014. [DOI:10.1016/j.patcog.2013.06.025](https://doi.org/10.1016/j.patcog.2013.06.025). [\[Preprint\]](#).

- [J19] Mauricio Delbracio, Andrés Almansa, and Pablo Musé. Recovering the Subpixel PSF from Two Photographs at Different Distances. *Image Processing On Line*, 2013:232–241, October 2013. ISSN 2105-1232. [DOI:10.5201/ipol.2013.77](https://doi.org/10.5201/ipol.2013.77).
- [J18] Mariano Tepper, Pablo Musé, and Andrés Almansa. On the role of contrast and regularity in perceptual boundary saliency. *Journal of Mathematical Imaging and Vision*, 2012. [DOI:10.1007/s10851-012-0411-6](https://doi.org/10.1007/s10851-012-0411-6). [\[Preprint\]](#).
- [J17] Mauricio Delbracio, Andrés Almansa, Jean-Michel Morel, and Pablo Musé. Subpixel Point Spread Function Estimation from Two Photographs at Different Distances. *SIAM Journal on Imaging Sciences*, 5(4):1234–1260, November 2012a. ISSN 1936-4954. [DOI:10.1137/110848335](https://doi.org/10.1137/110848335). [\[Preprint\]](#).
- [J16] Mauricio Delbracio, Pablo Muse, Andres Almansa, and Jean-Michel Morel. The Non-parametric Sub-pixel Local Point Spread Function Estimation Is a Well Posed Problem. *International Journal of Computer Vision*, 96(2):175–194, January 2012b. ISSN 0920-5691. [DOI:10.1007/s11263-011-0460-0](https://doi.org/10.1007/s11263-011-0460-0). [\[hal-00540637\]](#).
- [J15] Mauricio Delbracio, Pablo Musé, and Andrés Almansa. Non-parametric Sub-pixel Local Point Spread Function Estimation. *Image Processing On Line*, March 2012c. ISSN 2105-1232. [DOI:10.5201/ipol.2012.admm-nppsf](https://doi.org/10.5201/ipol.2012.admm-nppsf).
- [J14] Neus Sabater, Andrés Almansa, and Jean-Michel Morel. Meaningful matches in stereovision. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 34(5):930–42, May 2012. ISSN 1939-3539. [DOI:10.1109/TPAMI.2011.207](https://doi.org/10.1109/TPAMI.2011.207). [\[arXiv:1112.1187\]](#), [\[hal-00647995\]](#).
- [J13] N. Sabater, J.-M. Morel, and A. Almansa. How Accurate Can Block Matches Be in Stereo Vision? *SIAM Journal on Imaging Sciences*, 4(1):472–500, January 2011. ISSN 1936-4954. [DOI:10.1137/100797849](https://doi.org/10.1137/100797849). [\[hal-00671759\]](#).
- [J12] Mariano Tepper, Pablo Musé, Andrés Almansa, and Marta Mejail. Automatically finding clusters in normalized cuts. *Pattern Recognition*, 44(7):1372–1386, July 2011. ISSN 00313203. [DOI:10.1016/j.patcog.2011.01.003](https://doi.org/10.1016/j.patcog.2011.01.003). [\[hal-00631620\]](#).
- [J11] Gabriele Facciolo, Andrés Almansa, Jean-François Aujol, and Vicent Caselles. Irregular to Regular Sampling, Denoising, and Deconvolution. *Multiscale Modeling & Simulation*, 7(4):1574–1608, January 2009. ISSN 1540-3459. [DOI:10.1137/080719443](https://doi.org/10.1137/080719443). [\[Preprint\]](#).
- [J10] A. Almansa, C. Ballester, V. Caselles, and G. Haro. A TV Based Restoration Model with Local Constraints. *Journal of Scientific Computing*, 34(3):209–236, October 2007. ISSN 0885-7474. [DOI:10.1007/s10915-007-9160-x](https://doi.org/10.1007/s10915-007-9160-x).
- [J9] L. Igual, J. Preciozzi, L. Garrido, A. Almansa, V. Caselles, and B. Rougé. Automatic low baseline stereo in urban areas. *Inverse Problems and Imaging*, 1(2):319–348, May 2007. [DOI:10.3934/ipi.2007.1.319](https://doi.org/10.3934/ipi.2007.1.319). [\[PDF\]](#).
- [J8] Andrés Almansa, Vicent Caselles, Gloria Haro, and Bernard Rougé. Restoration and Zoom of Irregularly Sampled, Blurred, and Noisy Images by Accurate Total Variation Minimization with Local Constraints. *Multiscale Modeling & Simulation*, 5(1):235–272, 2006. [\[URL\]](#).
- [J7] Andres Almansa, Sylvain Durand, and Bernard Rouge. Measuring and improving image resolution by adaptation of the reciprocal cell. *Journal of Mathematical Imaging and Vision*, 21(3):235–279, November 2004. ISSN 0924-9907. [DOI:10.1023/B:JMIV.0000043739.51886.01](https://doi.org/10.1023/B:JMIV.0000043739.51886.01). [\[preprint\]](#).

- [J6] A. Almansa, A. Desolneux, and S. Vamech. Vanishing point detection without any a priori information. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 25(4):502–507, April 2003. ISSN 0162-8828. [DOI:10.1109/TPAMI.2003.1190575](https://doi.org/10.1109/TPAMI.2003.1190575). [\[URL\]](#).
- [J5] Andrés Almansa, Frédéric Cao, Yann Gousseau, and B. Rougé. Interpolation of digital elevation models using AMLE and related methods. *IEEE Transactions on Geoscience and Remote Sensing*, 40(2):314–325, 2002. ISSN 01962892. [DOI:10.1109/36.992791](https://doi.org/10.1109/36.992791). [\[PDF\]](#).
- [J4] A. Almansa and T. Lindeberg. Fingerprint enhancement by shape adaptation of scale-space operators with automatic scale selection. *IEEE transactions on image processing : a publication of the IEEE Signal Processing Society*, 9(12):2027–42, January 2000. ISSN 1057-7149. [DOI:10.1109/83.887971](https://doi.org/10.1109/83.887971). [\[preprint\]](#).
- [J3] Carlo Graziani and Andrés Almansa. Ein Algorithmus zur Simulation linearer dynamischer Modelle in kontinuierlicher Zeitformulierung unter vollkommener Voraussicht. *Wirtschaftswissenschaftliches Studium*, 27(6):319–324, June 1998a.
- [J2] Carlo Graziani and Andrés Almansa. Un algoritmo para la simulación de modelos lineales en tiempo continuo bajo previsión perfecta. *Estudios de Economía*, 24(1):185–196, June 1997. [\[URL\]](#).
- [J1] Carlo Graziani and Andrés Almansa. Un procedimiento para la simulación de modelos lineales en tiempo continuo con previsión perfecta e histéresis. *Estudios Económicos*, 13(1):35–56, 1998b. [\[URL\]](#).

Peer-Reviewed International Conferences

- [C60] Charles Laroche, Andrés Almansa, and Eva Coupete. Fast Diffusion EM: a diffusion model for blind inverse problems with application to deconvolution. In *(WACV) Winter Conference on Applications of Computer Vision*, 2024. to appear. [\[arXiv:2309.00287\]](https://arxiv.org/abs/2309.00287).
- [C59] Jean Prost, Antoine Houdard, Andrés Almansa, and Nicolas Papadakis. Inverse problem regularization with hierarchical variational autoencoders. In *(ICCV) International Conference on Computer Vision*, number 2, pages 1–32, 2023. [\[arXiv:2303.11217\]](https://arxiv.org/abs/2303.11217), [\[hal-04038644\]](https://hal.archives-ouvertes.fr/hal-04038644), [\[code\]](#).
- [C58] Nicolas Cherel, Andrés Almansa, Yann Gousseau, and Alasdair Newson. Modèle de diffusion frugal pour l’inpainting d’images. In *(GRETSI 2023) XXIXème Colloque Francophone de Traitement du Signal et des Images*, Grenoble, France, aug 2023. [\[hal-04199282\]](https://hal.archives-ouvertes.fr/hal-04199282).
- [C57] Charles Laroche, Andrés Almansa, Eva Coupeté, and Matias Tassano. Provably Convergent Plug & Play Linearized ADMM, applied to Deblurring Spatially Varying Kernels. In *(ICASSP) International Conference on Acoustics, Speech and Signal Processing*, oct 2023a. [\[arXiv:2210.10605\]](https://arxiv.org/abs/2210.10605), [\[hal-03822970\]](https://hal.archives-ouvertes.fr/hal-03822970), [\[code\]](#).
- [C56] Charles Laroche, Andrés Almansa, and Matias Tassano. Deep Model-Based Super-Resolution with Non-uniform Blur. In *(WACV) Winter Conference on Applications of Computer Vision*, Waikoloa, Hawaii, jan 2023b. IEEE. [\[hal-03787320\]](https://hal.archives-ouvertes.fr/hal-03787320), [\[arXiv:2204.10109\]](https://arxiv.org/abs/2204.10109).
- [C55] Varvara Chiliaeva, Olivier Gazzano, Yann Ferrec, Herve Sauer, Andres Almansa, and Francois Goudail. Imaging static Fourier transform spectrometry: impact of trajectory perturbations

- on the hyperspectral images. In Kyriaki Minoglou, Nikos Karafolas, and Bruno Cugny, editors, *(ICSO) International Conference on Space Optics*. SPIE, jul 2022. ISBN 9781510668034. [DOI:10.1117/12.2690836](https://doi.org/10.1117/12.2690836).
- [C54] Nicolas Cherel, Andres Almansa, Yann Gousseau, and Alasdair Newson. A Patch-Based Algorithm for Diverse and High Fidelity Single Image Generation. In *(ICIP) International Conference on Image Processing*, pages 3221–3225. IEEE, oct . ISBN 978-1-6654-9620-9. [DOI:10.1109/ICIP46576.2022.9897913](https://doi.org/10.1109/ICIP46576.2022.9897913). [\[hal-03822204\]](https://hal.archives-ouvertes.fr/hal-03822204).
- [C53] Jean Prost, Antoine Houdard, Andrés Almansa, and Nicolas Papadakis. Learning Local Regularization for Variational Image Restoration. In *(SSVM) International Conference on Scale-Space and Variational Methods in Computer Vision*, volume LNCS 12679, pages 358–370. Springer, feb 2021a. [DOI:10.1007/978-3-030-75549-2_29](https://doi.org/10.1007/978-3-030-75549-2_29). [\[hal-03139784\]](https://hal.archives-ouvertes.fr/hal-03139784). [\[arXiv:2102.06155\]](https://arxiv.org/abs/2102.06155).
- [C52] Jean Prost, Antoine Houdard, Andrés Almansa, and Nicolas Papadakis. Apprentissage d’une fonction de régularisation locale pour la restauration d’images. In *ORASIS*, sep 2021b. [\[hal-03339625\]](https://hal.archives-ouvertes.fr/hal-03339625).
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Book Chapters

- [L2] Julie Delon and Andrés Almansa. Reconstruction stéréo à faible rapport B/H. *Traités IC2: Information – Commande – Communication*, book chapter/section 12. Hermes-Science, Lavoisier, 2009. [\[hal-00479542\]](#).
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Patents

- B3** C. Laroche, M. Tassano Ferres, A. Almansa, *Systems, apparatus, and methods for super-resolution of non-uniform blur* Patent application nro. US20230281756A1, March 3rd 2023 [\[URL\]](#).
- B2** R. Abergel, A. Almansa, G. Blanchet, C. Latry, & L. Moisan (2020). *Method for constructing a high-resolution merged signal or image from a low-resolution plurality of signals or a low-resolution plurality of images*, [patent # FR3111462A](#), June 12 2020, pending extensions [WO2021250356A1](#), [EP4165589A1](#), [US20230105475A1](#).
- B1** A. Newson, A. Almansa, M. Fradet, Y. Gousseau, P. Perez, *Method for inpainting a target area in a target video*, Patent Application nro WO2015110537A1, January 23 2014. [\[URL\]](#)

Part III. Selected Oral Presentations

Invited talks in international conferences

ICAM 2023, Hong Kong *Invited Presentation* (30 min)

Provably convergent plug & play linearized ADMM, applied to deblurring spatially varying kernels

[International Conference on Applied Mathematics](#)

City University of Hong Kong, May 30 - June 3rd, 2023.

ICMS Workshop 2023, Edinburgh *Invited Tutorial* (60 min)

Plug & Play imaging methods

[Interfacing Bayesian Statistics, Machine Learning, Applied Analysis, and Blind and Semi-Blind Imaging Inverse Problems](#)

ICMS, Edinburgh, UK, Jan 24-26 2023.

MIA-MIVA Workshop, 2022 *Invited Presentation* (45 min)

Bayesian Imaging with Plug & Play Priors: implicit, explicit & unrolled cases [J31-34,P5, C55,P7]

[1st French-Italian workshop on the Mathematics of Imaging, Vision and their Applications \(MIA-MIVA\)](#)

Sophia-Antipolis, Sep 12-14 2022.

Google Computational Imaging Workshop, 2022 *Invited Presentation* (15 min)

Diverse Super-Resolution with Deep Hierarchical VAE Prior [P5]

[Detailed programme](#)

Online, August 3-4 2022.

ICMS Workshop 2022, Bath *Invited Presentation* (45 min)

[LMS/ICMS Workshop on Analytic and Geometric Approaches to Machine Learning](#)

[Detailed programme](#)

Bayesian Imaging with Plug & Play Priors: implicit, explicit & unrolled cases [J33,P6,C54]

University of Bath, UK, July 11-15 2022.

- IMA Workshop 2022, Edinburgh** *Contributed Presentation* (20 min)
Posterior Maximisation & Sampling with AutoEncoding Prior [J31]
[3rd IMA Conference on Inverse Problems from Theory to Application](#)
 ICMS, Edinburgh, UK, May 3-5 2022.
- ICMS Workshop 2021, Bath** *Invited Presentation* (30 min)
[LMS/ICMS Workshop on Analytic and Geometric Approaches to Machine Learning](#)
[Detailed programme](#)
Bayesian Estimators for Inverse Imaging Problems with Decoupled Learned Priors [J32,J33]
 Bath, UK Online, July 26 -30 2021.
- SIAM OneWorld IMAGINE Seminar, Online** *Invited Presentation* (45 min)
[SIAM OneWorld IMAGINE Seminar Series, 3rd season](#)
Solving Inverse Problems by Joint Posterior Maximization with a VAE Prior [P4,P5]
 Online, Feb 24th, 2021.
- ALGORITMY 2020, Slovakia** *Invited Presentation* (30 min)
[ALGORITMY 2020 Conference on Scientific Computing](#)
[Special session on Innovative models and algorithms for inverse problems in imaging](#)
Solving Inverse Problems by Joint Posterior Maximization with a VAE Prior [P4]
 Podbanske, Slovakia, Online, September 10-15 2020.
- ICMS Workshop 2020, Bath** *Invited Presentation* (30 min)
[Analytic and Geometric Approaches to Machine Learning](#)
Solving Inverse Problems by Joint Posterior Maximization with a VAE Prior [P4]
 Bath, UK, July 27-31st 2020. Postponed to 2021 due to the covid19 crisis.
- ICAM 2020, Hong Kong** *Invited Presentation* (30 min)
 International Conference on Applied Mathematics 2020 (ICAM2020)
Solving Inverse Problems by Joint Posterior Maximization with a VAE Prior [P4]
 Hong Kong, June 1-4, 2020. Postponed to 2023 due to the covid19 crisis.
- ICIAM 2019, Valencia** *Invited Presentation* (30 min)
[9th International Congress on Industrial and Applied Mathematics \(ICIAM 2019\)](#)
[Mini-Workshop on Optimisation and Inverse Problems in Imaging Science](#)
Fast and Accurate Multiplicative Decomposition for Fringe Removal in Interferometric Images
 Valencia, Spain, July 15 - 19, 2019.
- SIAM IS18, Bologna** *Invited Presentation* (30 min),
 SIAM Conference on Imaging Science, MS26 New Trends in Inpainting,
 “*Motion Consistent Video Inpainting*”, Bologna, 5-8 June 2018. [\[Abstract\]](#).
- ICT4V - CABIDA 2018, Uruguay** *Invited Presentation* (30 min), [1st Workshop on Big and Complex Data Theory, Applications and Value Creation](#). “*Towards fully automatic video inpainting*”, Montevideo, May 2018.
- UdelaR 2018, Uruguay** *Laudatio* (30 min), [Discours à l’honneur du Prof. J-M Morel à l’occasion de sa nomination en tant que Docteur Honoris Causa de l’Universidad de la República](#). Montevideo, 23 février 2018. [\[note de presse\]](#).
- Huawei 2018, Sophia Antipolis** *Invited Presentation* (45 min), Future ISP Technology - European Workshop. “*Single Shot HDR Imaging using Local Gaussian Models*” Sophia Antipolis, 22 septembre 2018.

- DID 2015, Cambridge** *Invited Presentation* (30 min), [Challenges in Dynamic Imaging Data](#), Workshop organized at the Isaac Newton Institute, Cambridge University, as part of the [Turing Gateway to Mathematics](#), [\[slides\]](#) [\[video\]](#)
- TSIMF 2015, Chine** *Invited Presentation* (40 min), [Workshop on New Trends in Optimization for Imaging](#), [Tsinghua Sanya International Mathematics Forum](#), Sanya, Chine.
- FoCM 2014, Uruguay** *Invited Presentation* (30 min), [Workshop on Computational Harmonic Analysis, Signal and Image Processing](#), [Foundations of Computational Mathematics](#), Sanya, 2015.
- CLEI 2014, Uruguay** *Keynote Speaker* (60 min), [Latin American Computing Conference](#), Montevideo, 2014.
- SIAM IS14, Hong Kong** *Invited Presentation* (30 min), [SIAM Conference on IMAGING SCIENCE, MS21](#), Hong Kong, 2014.
- SIAM IS12, USA** *Invited Presentation* (30 min), [SIAM Conference on IMAGING SCIENCE](#), Philadelphia, 2012.
- Univ. Coimbra 2010, Portugal** *Invited Tutorial* (5h) "Highly Accurate Image Restoration and Matching" at the [Summer School on Imaging Sciences and Medical Applications](#), Univ. Coimbra, Portugal.
- ICIAM 2007, Suisse** *Invited Presentation* (30 min), [6th International Congress on Industrial and Applied Mathematics](#), Zurich, 2007.

Invited Presentations at Local Meetings

- Lyon 2017** *Seminar* (45 min), [Séminaire de Modélisation Mathématique et Calcul Scientifique](#), Institut Camille Jordan, Lyon 17 février 2017 "Sur l'auto-similarité des images naturelles & son application en restauration d'images et de films".
- Université Paris Descartes 2016** *Seminar* (30 min), [Journée de Rentrée du MAP5](#), 7 octobre 2016 "Sur l'auto-similarité des images naturelles & son application en restauration d'images et de films".
- Telecom ParisTech 2016** *Seminar* (30 min), [Journée Recherche TSI](#), 7 juillet 2016 "Sur l'auto-similarité des images naturelles & son application en restauration d'images et de films".
- TU Kaiserslautern 2016** *Seminar* (45 min), [DFG-Graduiertenkolleg 1932 "Stochastic Models for Innovations in the Engineering Sciences"](#), Kaiserslautern, may 10th 2016. "A Hyperprior Bayesian Approach for Solving Image Inverse Problems".
- Caen 2015** *Seminar* (45 min), Séminaire de l'équipe image du [GREYC](#), 10 décembre 2015, "From Example-Based to Local Gaussian Priors. Applications to Video Inpainting and HDR Imaging".
- JBAMI 2014, Bordeaux** *Plenary Talk* (50 min), [2nd Workshop on Mathematical Analysis of Images in Bordeaux](#).
- MIO 2012, Orléans** *Plenary Talk* (45 min) [3rd Conference Mathematics & Image Processing, Orléans](#).