Claire Launay

Postdoctoral researcher

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Background

2023–... **Postdoctoral researcher**, Institut Denis Poisson, Université de Tours, *Supervisors: Hermine Birmé, Céline Lacaux, Philippe Carré*.

2020–2023 **Postdoctoral researcher**, Albert Einstein College of Medicine, *Supervisor: Ruben Coen Cagli*.

2016–2020 **PhD in Applied Mathematics**, Université de Paris.
Discrete determinantal point processes and image processing. Supervisors: Bruno Galerne (Institut Denis Poisson) and Agnès Desolneux (Centre Borelli).

2015–2016 **Master of Mathematics, Computer Vision and Machine Learning**, ENS Paris Saclay, with highest honors.

2014–2015 **Master of Applied Mathematics**, Université Paris Descartes, with highest honors.

2012–2014 **Bachelor in Applied Mathematics**, Université Paris Descartes, with highest honors.

2010–2012 **Undergraduate studies**, Humanities and social sciences, Lycée Guist'hau, Nantes.

Research experience

Preprints

2023 Measuring uncertainty in human visual segmentation, J. Vacher, C. Launay, P. Mamassian, R. Coen-Cagli, arXiv:2301.07807, [arXiv preprint]

Publications

2022 Unsupervised Video Segmentation Algorithms Based On Flexibly Regularized Mixture Models, C. Launay, J. Vacher, R. Coen-Cagli, 2022 IEEE International Conference on Image Processing (ICIP), pp. 4073-4077, October 2022 [pdf]

Flexibly Regularized Mixture Models and Application to Image Segmentation, J. Vacher, C. Launay, R. Coen-Cagli. Neural Networks 149, 107-123, February 2022 [pdf]

2021 Determinantal Point Processes for Image Processing, C. Launay, B. Galerne, A. Desolneux. SIAM Journal on Imaging Sciences, 14(1), March 2021. [pdf]

2020 Exact Sampling of Determinantal Point Processes without Eigendecomposition, C. Launay, B. Galerne, A. Desolneux. Journal of Applied Probability, JAP 57.4, Dec. 2020. [pdf]

PhD thesis: Determinantal Point Processes Applied to Image Processing, C. Launay, June 2020. [pdf]

2019 Determinantal Patch Processes for Texture Synthesis, C. Launay, A. Leclaire, proceedings of GRETSI 2019. [pdf]

2017 Etude de la répulsion des processus pixelliques déterminantaux, A. Desolneux, B. Galerne, C. Launay, proceedings of GRETSI 2017. [pdf]

Talks and poster presentations

Oct. 2022 **CRCNS PI Meeting**, *Unsupervised Spatio-Temporal Integration Captures Perceptual Grouping Stability and Uncertainty*, Atlanta, Georgia, United States.

Oct. 2022 **ICIP 2022 Conference**, *Unsupervised Video Segmentation Algorithms Based on Flexibly Regularized Mixture Models*, Bordeaux, France.

Feb. 2022 **NeuroAILab**, *Static and Dynamic Segmentation Based on Flexibly Regularized Mixture Models*, (remotely) Standford University, California, United States.

Aug. 2021 **MAS20 Conference**, *Determinantal pixel processes: Texture synthesis and inference*, (remotely) Université d'Orléans, France.

Feb 2021 **LMA Seminar**, *Determinantal Point Processes, exact sampling and application*, (remotely) Université de Poitiers, France.

June 2020 **PhD Defense**, *Determinantal point processes applied to image processing*, Université de Paris, France.

March 2020 **Coen-Cagli Laboratory**, *Determinantal Point Processes for Image Processing*, (remotely) Einstein College of Medicine, New York, United States.

Aug. 2019 **GRETSI Conference**, *Determinantal Patch Processes for Texture Synthesis*, Lille, France.

May 2019 **SMAI Conference**, *Determinantal point processes and the patches of an images*, Guidel, France.

April 2019 **IOP Seminar**, *Determinantal point processes and some applications to images*, Université de Bordeaux, France.

March 2019 **Jean Leray laboratory Seminar**, *Determinantal point processes and some applications to images*, Université de Nantes, France.

Nov. 2018 **Forum for young mathematicians**, *Determinantal pixel processes and repulsion*, Women and Mathematics, Orléans, France.

Nov. 2018 **Mokaplan Seminar**, *Determinantal point processes and images: some applications*, INRIA, Paris, France.

Nov. 2018 **Work group on Repulsive Point Processes**, *Determinantal point processes and images : some applications*, MAP5, Université Paris Descartes, Paris, France.

Juin 2018 **SIAM Conference**, *Sampling in the space of image patches with determinantal point processes*, (poster), Bologna, Italy.

Oct. 2017 **Welcome day for PhD students**, Fondation Sciences Mathématiques de Paris, Paris, France.

Sept. 2017 **GRETSI Conference**, *Study of the repulsion in determinantal pixel processes*, (poster), Juan-les-Pins, France.

May 2017 **Spring school MENAVO 2017 on Numerical methods and algorithms for computer vision**, *Study of the repulsion in determinantal pixel processes*, (poster), Albas, France.

Research internship

April–Sept. 2016 **Multi image dynamic range extension**, DxO Labs, 6 months, supervised by Wolf Hauser (DxO) and Julie Delon (MAP5).

Prototype implementation of an High Dynamic Range (HDR) feature for the company's camera and software.

Teaching experience

2020–2023 **Jury member**, Selective examination to enter the ENS Paris Saclay D2 class, on Mathematics and Statistics - written exam (2020-2023) and oral exam (2022-2023).
Université Paris Saclay

2019–2020 **Temporary teacher and researcher**, *(192 hours)*, for the courses of Prof. Nathael Gozlan (Introduction to probability) and Prof. Marcela Szopos (Mathematics and Arithmetics), Bachelor projects supervision, Université Paris Descartes.

2016–2019 **Teaching assistant**, *(64 hours per year)*, for the courses of Prof. Annie Raoult, Prof. Florent Benaych-Georges and Prof. Marcela Szopos (Mathematics and Arithmetics), Bachelor projects supervision, Université Paris Descartes.

Scholarships

2016–2019 PhD fellowship from the program DIM RDM-IdF - Région Ile-de-France.

2014–2016 Master scholarship from the Paris Graduate School of Mathematics (PGSM) program, Fondation Sciences Mathématiques de Paris.

Miscellaneous

- Social media representative in the Einstein Postdoctoral Association (2021-2023)
- PhD students representative in the MAP5 laboratory (2017-2019)

Languages

- French Mother tongue
- English Fluent
- Spanish Basic

Computer skills

- Matlab, Python, LaTeX
- Notions in R, C++

Hobbies

- Photography, Theatre
- Travels : Europe, Tanzania, United States