

Jonathan Vacher
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Website : jonathanvacher.github.io

Born 04.10.1989
French
Single
Driving license in 2007

Research experience

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| 2013–Now | PhD under the supervision of G. Peyré and C. Monier <i>Applied Mathematics and Neurosciences. Dynamic textures synthesis for visual stimulation. Psychophysical study of speed perception. Extracellular and optical (VSDi) recording for the study of the cat visual cortex : experimental involvement and data analysis using machine learning tools.</i> Dauphine University (PSL), Paris. Unité Neuroscience, Information et Complexité (UNIC-CNRS), Gif-sur-Yvette. |
| 2011–2012 | Research internship under the supervision of J-M. Morel and B. Coll. <i>Texture synthesis : the Portilla-Simoncelli algorithm (statistical tools, optimization, C implementation).</i> Universitat de les Illes Balears, Mallorca. Centre de Matemàtiques et de Leurs Applications (CMLA), Cachan. |

List of contributions

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| 2016 | Bayesian Modeling of Motion Perception using Dynamical Stochastic Textures <i>Arxiv, PREPRINT.</i> Link |
| 2015 | Biologically Inspired Dynamic Textures For Probing Motion Perception <i>Conf. Neural Information Processing System (NIPS).</i> Link |
| 2015 | How to Apply a Filter Defined in the Frequency Domain by a Continuous Function ? <i>Journal. Image Processing Online (IPOL). Implementation of the Steerable Pyramid (Link) and other filters. Detailed algorithms, online demo, open source code in C.</i> Link |
| 2013 | The Heeger-Bergen Pyramid Based Texture Synthesis Algorithm <i>Journal. Image Processing Online (IPOL). Detailed algorithm, online demo, open source code in C.</i> Link |

Education

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| July 2013 | Highest mathematics competitive exam for academic teaching <i>Agregation de Mathématiques.</i> |
| 2010–2013 | Master's degree in mathematics <i>Mathematics, Vision and Learning. Graduated with honours.</i> École Normale Supérieure de Cachan. |
| 2007–2010 | Classe Préparatoire aux Grandes Écoles (CPGE). <i>Three years intensive undergraduate program - training for highly selective competitive exams to enter French engineering schools, specialized in Mathematics</i> Pierre De Fermat highschool, Toulouse. |

Teaching Activities

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| 2013–2015 | Analysis, Linear Algebra, Differential Calculus. <i>Three hours a week. Mid to high level students.</i> Dauphine University, Paris. |
| 2011–2013 | Examiner in mathematics. <i>Oral exam training. Two hours a week. High level students.</i> CPGE, Janson de Sailly highschool, Paris. |

Awards and Scholarships

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| 2012–2013 | Excellence Master's Scholarship <i>Funding (10 000 euros) from the Fondation de Mathématiques Jacques Hadamard (FMJH)</i> Link |
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Languages

French : native / English : fluent / Spanish : basic

Computer Science

Operating systems : Linux, Windows

Languages : Python (parallel/GPU computing), Matlab, basic knowledge in C/C++

Interests and other activities

Sports : handball, hiking, tennis, ...

Video/Board Games : hearthstone, megawatt, smallworld, 7 wonders, ...

Music, cinema, sciences, social sciences, economy, politics, ...

President of the association "Les sENS de l'Art" in 2012 : in charge of the organization of the annual art and music festival of ENS Cachan (budget : 40 000 euros).