Samy Blusseau

PhD in applied mathematics

Born on 27/10/1987
French-Italian

Education

2011 – 2015 **Ecole Normale Supérieure de Cachan**, *Cachan*, France.
PhD in applied Mathematics, defended on September 22nd 2015.
Advisors: Prof. J-M. Morel and Dr. R. Grompone von Gioi.

2010 – 2011 **Ecole Normale Supérieure de Cachan**, *Cachan*, France.
Master's degree *Mathématiques, Vision, Apprentissage* (MVA) in computer vision and machine learning.

2007 – 2011 **TELECOM ParisTech**, *Paris*, France.
Ingénieur Grande Ecole diploma. France's leading school in Information Technologies.

2005 – 2007 **Lycée du Parc**, *Lyon*, France.
Classes préparatoires aux grandes écoles, mathematics and physics tracks.

Professional experience

2017 **Telecom ParisTech - Mines ParisTech**, *Paris - Fontainebleau*, France.
Postdoctoral researcher on the subject: Mathematical morphology in non-Euclidean spaces applied to medical images.
- Non-local mathematical morphology
- Mathematical morphology applied to semi-positive definite matrices
- Advisors: Prof. Isabelle Bloch, Yann Gousseau, Jesús Angulo and Dr. Santiago Velasco Forero

2015 – 2016 **University of Southampton**, *Southampton*, United Kingdom.
Research fellow on the subject: Human vision and natural scene statistics.
- Design and completion of human psychophysics experiments on human perception of surfaces orientations
- Development of stochastic models of human perception of surfaces orientations
- Advisors: Prof. Wendy Adams, Erich Graf and James Elder

2011 – 2015 **Ecole Normale Supérieure de Cachan**, *Cachan*, France.
PhD in applied Mathematics, on models of perceptual grouping in human vision
- Design and set up of psychophysical experiments on contours detection (45+ subjects)
- Design and implementation of detection algorithms based on a probabilistic approach (*a contrario* theory)
- Analysis of the perceptual data and comparison to the results of the detection algorithms
- Advisors: Prof. J-M. Morel and Dr. R. Grompone von Gioi.

2011 – 2014 **Ecole Normale Supérieure de Cachan**, *Cachan*, France.
- Teaching assistant in mathematics (150 hours): lab classes on *Measure and Probability Theories* for third year students, mock oral exams for *agregation* candidates
- Teacher in computer science (20 hours): introduction to *C* programming (theory and lab classes)

2011 **LIMSI - CNRS**, *Orsay*, France.
Research intern in Statistical Machine Translation of spoken languages (6 months). Advisor: Prof. F. Yvon.

2010 **Universidad de Buenos Aires (UBA)**, *Buenos Aires*, Argentina.
Research intern in video image processing (6 months). Advisor: Prof. M. Mejail.

2009 – 2010 **General Electric Healthcare**, *Buc*, France.
Engineer intern in cardiovasculary image processing (6 months). Advisor: Dr. V. Bismuth.

Languages

French & Italian — Native speaker.

English — Fluent. Level C1 (*CECRL* European standard). Member of TELECOM ParisTech's English Debating team (2008).

Spanish — Fluent. Level C1 (*CECRL* European standard).

Tech skills

Programming — C/C++, Python, Bash, Matlab, Psychtoolbox, LaTeX, HTML, Javascript.

Environments — GNU/Linux, Unix, Windows, OSX.

Hobbies

Sport — Competitor in handball (since 1997) and running (10 km, 15 km, 21 km)

Culture — Street Art fan (10+ artists regularly followed in galleries and street shows)

Publications

S. Blusseau, W. Adams, E. Graf, J. Elder, and A. Lughtigheid. Visual discrimination of surface attitude from texture. In *Perception, ECVP Proceedings*, 2016.

S. Blusseau, A. Carboni, A. Maiche, J.-M. Morel, and R. Grompone von Gioi. Measuring the visual salience of smooth paths by their non-accidentalness. In *Journal of Vision, VSS Proceedings*, 2016.

S. Blusseau, A. Carboni, A. Maiche, J.M. Morel, and R. Grompone von Gioi. A psychophysical evaluation of the a contrario detection theory. In *Image Processing (ICIP), 2014 IEEE International Conference on*, pages 1091–1095, Oct 2014.

S. Blusseau, A. Carboni, A. Maiche, J.M. Morel, and R. Grompone von Gioi. Measuring the visual salience of alignments by their non-accidentalness. *Vision Research*, 126:192 – 206, 2016. Quantitative Approaches in Gestalt Perception.

S. Blusseau and R. Grompone von Gioi. Generation and Detection of Alignments in Gabor Patterns. *Image Processing On Line*, 6:268–299, 2016.

J. Lezama, S. Blusseau, J.-M. Morel, G. Randall, and R. Grompone von Gioi. Psychophysics, gestalts and games. In Giovanna Citti and Alessandro Sarti, editors, *Neuromathematics of Vision*, Lecture Notes in Morphogenesis, pages 217–242. Springer Berlin Heidelberg, 2014.