Nicolas Charon

Ph.D in mathematics
Born on Feb 19th 1987 in Toulouse (France)

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Research

Publications and preprints

- Lee, Charon, Charlier, Popuri et al. (2015), Atlas-based Shape Analysis and Classification of Retinal Optical Coherence Tomography Images using the Functional Shape (fshape) Framework, preprint
- Charon, Charlier & Trouvé (2014), The fshape framework for the variability analysis of functional shapes, to appear in Journal of Foundations of Comput. Maths.
- Ragni, Diguet, Le Garrec, Pop, Charon et al. (2014), Amotl1 mediates non-canonical Hippo signalling downstream of Fat4 to restrict heart growth, submitted to Nature of cell biology.
- Durrleman, Prastawa, Charon et al. (2013) Deformetrics : morphometry of shape complexes with space deformations, Neuroimage, vol 101, pp. 35-49
- Charon & Trouvé (2013), The varifold representation of non-oriented shapes for diffeomorphic registration, SIAM journal of Imaging Science, vol. 6(4), pp 2547–2580.
- Charon & Trouvé (2013), Functional currents : a new mathematical tool to model and analyse functional shapes, Journal of Mathematical Imaging and Vision, Springer, Jan. 2013
- Charon & Barbaresco (2009), Une nouvelle approche pour la détection de cibles dans les images radar basée sur des distances et moyennes dans espaces de matrice de covariance, TS, vol. 26, $n°4$, pp. 269-278

Research internships & projects

- Participant in the current development of Deformetrica Software for shape registration and atlas estimation (since march 2013)
- One week research project (AMIES) on lung diffusion imaging in collaboration with Air Liquide company (april 2011)
- Internship at Thales Air Systems, Limours : target detection in radar imaging (april-august 2008)
- RIPS 2007 in UCLA, Los Angeles : stabilisation of panoramic boat-mounted videos (may-july 2007)

Invited conference and seminar talks

- International Congress on Industrial and Applied Mathematics, Bejing (2015)
- Applied Maths. Department seminar, Johns Hopkins University (2015)
- Congrès franco-roumain des Mathématiques appliquées, Université de Lyon (2014)
- SIAM conference of Imaging Sciences, Hong-Kong (2014)
- Presentation to the CIS seminar, Johns Hopkins University, Baltimore (2014)
- Presentation to the image group seminar in DIKU, University of Copenhagen (2013)
- Presentation to MAP5 seminar, Université Paris Descartes (2013)
- Shape FRG meeting, Johns Hopkins University, Baltimore (2013)
- Presentation to the image seminar , Université Paris-Dauphine, Paris (2013)
- Workshop SIGMA'2012 , CIRM Marseille (2012)
- International Conference on Mathematical Methods for Curves and Surfaces , Oslo (2012)
- Séminaire Landau , Université Rennes 1 (2012)
- Shape FRG meeting, ENS Cachan, Paris (2012)
- SMAI poster session, Guidel (2011), awarded best poster prize.
- Shape FRG meeting, Imperial College, London (2011)

Reviewing

- US Army research office.
- Transactions of Pattern Analysis and Machine Intelligence (TPAMI).
- International Journal of Computer Vision (IJCV).

Past positions

- Post-doctoral research fellow and teaching assistant at University of Copenhagen (Denmark), January 2014- December 2014
- PhD. student and teaching assitant at ENS Cachan (France), September 2011 - December 2013

Education

- Ph.D in applied mathematics, ENS Cachan, 2010-2013
  - *Title :* Analysis of geometric and functional shapes with extensions of currents. Applications to registration and atlas estimation.
  - *Ph.D advisor :* Alain Trouvé
  - *Reviewers :* David Mumford, Gabriel Peyré
  - *Defense date :* November 14th 2013
- Agrégation de Mathématiques, 2009 : Received (rank 24)
- Masters degree MVA (mathematics, vision and learning), ENS Cachan 2008
- Bachelor degree of general mathematics, ENS Cachan & UP7, 2007
- Classes préparatoires aux grandes écoles, Lycée Pierre de Fermat (Toulouse) 2004-2006 : Admitted at ENS Cachan

Teaching

- Mathematical Image Analysis (EN 550.493), Johns Hopkins University (spring 2015)
- Signal and image processing (computer science MD), University of Copenhagen (fall 2014)
- Numerical analysis (MD level), ENS Cachan (2011-2013)
- Complex analysis (MD level), ENS Cachan (2010)
- Differential calculus (TA, bachelor degree level), ENS Cachan (2010-2013)