François Rousseau

Professor · Institut Mines Télécom Atlantique

(+33) 2 29 99 13 51 | francois.rousseau@imt-atlantique.fr | https://rousseau.github.io/

Appointments

Professor — *Brest, France*
Institut Mines Télécom Atlantique, LaTIM INSERM — *2015 - Present*
- Image and Information Processing Department.

Research scientist — *Strasbourg, France*
CNRS, ICube Lab — *2006 - 2015*
- Model, Image, Vision team.

Research and teaching assistant — *Strasbourg, France*
University of Strasbourg, ENSPS, LSIIT — *2005 - 2006*
- Model, Image, Vision team.

Post-doctoral fellow — *San Francisco, USA*
University of California San Francisco — *2004 - 2005*
- Biomedical Image Computing Group with Colin Studholme.

Education

"Habilitation à diriger des recherches" — *Strasbourg, France*
University of Strasbourg — *2014*
- "Image analysis methods for brain computational anatomy".

PhD Signal and Image Processing — *Rennes, France*
University of Rennes — *2000 - 2003*
- "Image analysis and calibration methods for 3D freehand ultrasound".
- Thesis advisor: Christian Barillot

MSc in Instrumentation and Control for Vision Systems — *Rouen, France*
University of Rouen — *2000*

Engineer in Applied Mathematics — *Rouen, France*
INSA Rouen — *2000*

Professional Activities

Awards and Fundings (as PI)
- 2020-2024, ANR AI Chair, "Artificial Intelligence for Paedriatric Neurorehabilitation"
- 2020-2023, Labex CominLabs, co-PI with Nicolas Courty, "Dynamical Modeling for Machine Learning"
- 2019, CNRS-Inserm, "Dynamic Brain Development Modeling from MRI data"
- 2018, IMT, co-PI with Ronan Fablet, "SenseNet : "Automatic recognition from the electrical sense by deep learning"
- 2017-2020, FRM, "Biophysically-based computational modelling to explore impact of neonatal stroke on brain growth"
- 2015-2020, INSERM Chair of Excellence
- 2015-2019, ANR, "Multiphysics image-based AnalysIs for premature brAin development understanding"
- 2013-2014, IMT "Futur et Ruptures", co-PI with Ronan Fablet, "Learning and assimilation of high-resolution ocean dynamics".
- 2008-2013, ERC Starting Grant, "Computational Anatomy of Fetal Brain"
- 2008-2010, CNRS, "Morphometry analysis of fetal brain maturation study"

Publications

- > 50 articles in international journals
- 4 book chapters
- > 70 articles in conferences and workshops.

5 of the most representative publications

- F. Rousseau, L. Drumetz, R. Fablet. "Residual Networks as Flows of Diffeomorphisms", Journal of Mathematical Imaging and Vision, 2020
- T. Tallinen, J. Y. Chung, F. Rousseau, N. Girard, J. Lefèvre, L. Mahadevan. "On the growth and form of cortical convolutions". Nature Physics, 2016
- F. Rousseau, P. Habas, C. Studholme, "A supervised patch-based approach for human brain labeling", IEEE Transactions on Medical Imaging, 2011
- F. Rousseau, "A non-local approach for image super-resolution using intermodality priors", Medical Image Analysis, 2010.
- F. Rousseau, O. Glenn, B. Iordanova, C. Rodriguez-Carranza, D. Vigneron, J. Barkovich, C. Studholme, "Registration-Based Approach for Reconstruction of High-Resolution In Utero Fetal MR Brain Images", Academic Radiology, 2006

Organization of scientific meetings

- Co-organization of national conferences on neonatal brain imaging (2019, 2021, 2021)
- Co-organization of 3 MICCAI workshops (2009, 2011, 2012) on early brain development.
- Member of program committee: MICCAI 2013, MICCAI 2014, RFIA 2016, RFIAP 2018, RFIAP 2020.
- Co-organization of national GDR ISIS workshops (2014, 2015, 2016) on image analysis and modeling of living.
- IEEE Summer School Biomedical Imaging, St Jacut, France (2016, 2018).

Institutional responsibilities

- Since 2019, associate editor of Journal of Neuroradiology, Elsevier.
- 2017-2021, co-leader of Modeling group, LaTIM Lab.
- 2012-2020, elected member of AFRIF (national IAPR association for pattern recognition) board.
- 2016-2019, elected member of CoNRS (National Committee for Scientific Research).
- 2015-2017, scientific council member of IBSAM, Brest.
- 2013-2015, leader of Biomedical Image Processing Group, ICube Lab.
- 2013-2015, elected member of ICube Lab council.

Commissions of trust

- Regular reviewer for funding agencies: ERC (2015), ANR (2010, 2012, 2014, 2015, 2019, 2020,2021,2022), INRIA (2010), INSERM (2020), CNRS (2017), Austrian Science Fund (2012, 2014), Czech Science Foundation (2012), Swiss NSF (2012, 2014, 2017, 2020, 2021, 2022), NWO (2013), DAAD Germany (2019).
- Regular reviewer for international scientific journals (such as IEEE Trans. Medical Imaging, Medical Image Analysis or Neuroimage).
- Reviewer for PhD thesis (Imperial College London, INRIA, Neurospin-University of Paris-Sud, CREATIS INSA Lyon, University of Paris-Descartes, University of Rouen, University of Strasbourg, ...).
- 2020, member of lab evaluation committee HCERES (France).
- 2012, member of lab evaluation committee ANCS (Romania).
- 2011, member of selection committee for the recruitment of Assistant Professor position (University of Nancy)
- 2009, 2010, member of lab evaluation committee AERES (France).

PhD Supervision (official (co-)direction: ⋆)

- Zakaria Jarraya⋆, co-supervised with Douraied Ben Salem, 2021-...
- Sarah Reynaud⋆, co-supervised with Douraied Ben Salem and Adrien Merlini, 2021-...
- Anne Kerachni⋆, co-supervised with Julien Lefèvre, 2021-...
- Zhengyang Lan, co-supervised with Sylvain Brochard, Djalil, Mathieu Lempereur, 2021-...
- Chloé Mercier, co-supervised with Theirry Chonavel and Sylvain Faisan, 2021-...
- Claire Scavinner⋆, co-supervised with Douraied Ben Salem, 2020-...
- Nathan Decaux⋆, co-supervised with Sylvain Brochard and Pierre-Henri Conze, 2020-...
- Yue Cheng⋆, co-supervised with Douraied Ben Salem, 2019-...
- Simon Benaïchouche⋆, co-supervised with Ronan Fablet, 2019-...
- Xiaoyu Wang⋆, co-supervised with Julien Lefèvre, 2017-2021, postdoc at Neurospin, Saclay
- Juliette Ropars⋆, co-supervised with Sylvain Brochard, 2015-2021, medical doctor, Brest
- Marc Garetier⋆, co-supervised with Douraied Ben Salem, 2016-2020, medical doctor, Brest
- Antoine Legouhy⋆, co-supervised with Christian Barillot and Olivier Commowick, 2016-2020, postdoc at UCL, London
- Karim Makki⋆, co-supervised with Douraied Ben Salem, 2016-2019, postdoc at INRIA
- Carlos Tor Diez⋆, co-supervised with Nicolas Passat, 2016-2019, machine learning developer at Vexcel Imaging, Madrid
- Chi-Hieu Pham⋆, 2015-2018, assistant lecturer at ISEN, Brest
- Lucas Soustelle, co-supervised with Jean-Paul Armspach and Paulo Loureiro de Sousa, 2014-2018, currently postdoc at CRMBM Marseille
- Julien Pontabry, co-supervised with Christian Heinrich, 2010-2013, currently research engineer at RS2D Strasbourg
- Mériam Koob, co-supervised with Jean-Louis Dietemann and Jean-Paul Armspach, 2008-2012, currently MD at CHUV Lausanne
- Benoit Caldairou, co-supervised with Christian Heinrich and Nicolas Passat, 2008-2012, currently research assistant at McGill Montréal
- Swati Sharma, co-supervised with Jean-Paul Armspach and Fabrice Heitz, 2007-2011, San Francisco Bay Area

PostDoc Supervision

- Guillaume Morel, 2020-2022, co-supervised with Lucas Drumetz
- Lamarana Diallo, 2019, co-supervised with Ronan Fablet
- Estanislao Oubel, 2009-2011, currently lead research scientist at Quantum Surgical SAS
- Larbi Boubchir, 2012-2013, currently assistant professor at University Paris 8
- Pierre-Henri Conze, 2014-2015, co-supervised with Fabrice Heitz and Vincent Noblet, currently assistant professor at IMT Atlantique

Research Engineer Supervision

- Benjamin Fouquet, 2020-...
- Marc Schweitzer, 2012-2013, currently research engineer at IRCAD Strasbourg
- Frédéric Champ, 2012-2013, currently research and innovation manager at BIOMODEX Paris
- Aicha Ben Taieb, 2012-2013, currently research scientist at Roche, San Francisco Bay Area