Franck RUFFIER
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h-index: 14 ; 766 Citations (Sum of the Times Cited, Web of Science, Dec 2018) www.researcherid.com/rid/G-4797-2013
h-index: 20 ; 1835 Citations (Google Scholar, Dec 2018) https://scholar.google.fr/citations?user=H_yIbpgAAAAJ&hl

More than 80 scientific articles including:
- 29 journal articles + 2 editorials in journals (J. Citation Report),
- 38 peer-reviewed international conference papers,
- 12 book chapters.

17 full invitations including:
- 7 invitations to international conferences abroad,
- 2 invitations to international conferences in France,
- 3 invitations to national conferences,
- 5 invitations to national workshops,

38 lab seminars including 20 seminars abroad,
10 participations in external thesis committees, including 5 thesis committees abroad (7 in total as rapporteur),
9 patent applications,
20 oral presentations at international congresses,
18 contracts (EU, DGA, CNRS, ANR, ESA, ANRT...) including 9 contracts where I am the principal investigator,
2 research internships abroad (Japan and USA),

10 Phd students including:
- 5 supervised or co-directed PhD theses defended,
- 2 co-supervised PhD theses defended,
- 3 ongoing PhD theses.

4 Thesis Prizes awarded to my doctoral students, G. Sabiron, F. Expert and J. Serres,

8 robots designed & built (Octave, Lora, TwinCoAx, BeeRotor, X4Mag, X-Morf, BioCarBot, AceBot),

4 technological transfer initiatives,

40 seminars organized for my laboratory.

University Curriculum:

Feb. 2013: Defense of the "Accreditation to supervise research" (**Habilitation**, *HDR*), Aix-Marseille University
HDR Thesis title: "From insects to robots: observe, rebuild, innovate and better understand"

Sept. 2004: **PhD** from Grenoble INP
Thesis prepared at CNRS, Marseille within the Biorobotics Dpt. advised by N. Franceschini
PhD Thesis Title: "Biomimetic Autopilot"

Sept. 2000: **Engineer** from ESISAR / Grenoble INP (Automatic Control, Computer Sciences, Electronics)

Professional Experience:

Since 2018: Responsible for the French Research Network in Information Science "Vision guided by emerging sensors" initiative with G. Caron and P. Vasseur

Since 2015: Head of the UAV Working group for French Research Network in Robotics with P. Morin

2014-2017: Nominated member of "IFAC Technical Committee, TC 4.3 Robotics"

2013: Co-Founder of the "Marseilles' Flying Arena", www.marseilles-flying-arena.eu

Feb/March 2012: Visiting Scientist invited by Prof. Michael Dickinson, Univ. of Washington, Seattle, **USA**

2012-2016: Co-Head of the Biorobotics Research Group at the Institute of Movement Science, Marseille

2009/2013: EU CURVACE project on the realization of an artificial compound eye www.curvace.org

April/May 2008: Visiting Scientist invited by Dr. T. Mukai at RIKEN, Nagoya, **Japan**

Since 2005: CNRS Research Scientist at the Institute of Movement Science, Marseille

2004-2005: PostDoc within the Biorobotic Research Group (headed by N. Franceschini), Marseille

1999-2000: Exch student at Lund Univ where I have passed a French Master (DEA) in Automatic Control, **Sweden**

Awards and Prizes:

2017: CNRS Excellence Prize for Research and Mentoring (PEDR)

2016: Expert & Ruffier (2015) doi: 10.1088/1748-3182/10/2/026003
Article selected in the "*Bioinspiration & Biomimetics Highlights of 2015*" as well as in the 10 papers collection of the "*Bioinspiration & Biomimetics 10th anniversary*"

2008-13-15: 3 of my PhD students, J. Serres, F. Expert and G. Sabiron, won 4 prizes for their PhD thesis.

2012: CNRS Excellence Prize for Research (PES)

2003-2011: 2 best paper awards at IEEE International Conferences – IEEE ICAR 2003 & IEEE Sensors 2011 –

2004: 1 paper nominate (Best vision paper finalist) at IEEE ICRA 2004

2005: « La Recherche » Prize with N. Franceschini and S. Viollet (French-speaking intern. research prize)

Total number of publications in intern. Journals and referred Proceedings (Web of Science): 63

Total number of patent filed: 9

10 most significant publications:

[1] Colonnier, F., Ramirez-Martinez, S., Viollet, S. & **Ruffier, F.** (2018) ***Accepted*** (decision letter pdf)
"A Bio-inspired Sighted Robot Chases like a Hoverfly"
Bioinspiration & Biomimetics, IOP Preprint PDF

[2] **Ruffier, F.** (2018) ***Perspectives*** **paper in ScienceMag**
"Robotic-flapper maneuvers and fruitfly turns"
Science, 361(6407), 1073-1074. doi: 10.1126/science.aau7350 Preprint PDF

[3] G. Portelli, J. R. Serres & **F. Ruffier** (2017) **Open Access**
"Altitude control in honeybees: joint vision-based learning and guidance"
Scientific Reports, NPG, 7, Article number: 9231, doi:10.1038/s41598-017-09112-5

[4] J. R. Serres & **F. Ruffier** (2017) **Open Access**
"Optic flow-based collision-free strategies: From insects to robots"
Arthropod Structure & Development, Elsevier, ISSN 1467-8039, doi:10.1016/j.asd.2017.06.003.

[5] S. Mafrica, A. Servel, **F. Ruffier** (2016) **Open access**
"Minimalistic optic flow sensors applied to indoor and outdoor visual guidance and odometry on a car-like robot"
Bioinspiration and Biomimetics, IOP, 11 (2016) 066007 doi:10.1088/1748-3190/11/6/066007

[6] G. Sabiron, T. Raharijaona, L. Burlion, E. Kervendal, E. Bornschlegl & **F. Ruffier** (2015) **Open access**
"Suboptimal lunar landing GNC using nongimbaled optic-flow sensors"
IEEE Trans. on Aerospace & Electronic Systems, 51(4), pp. 2525-2545 doi: 10.1109/TAES.2015.130573

[7] F. Expert and **F. Ruffier** (2015) **Open access**
"Flying over uneven moving terrain based on optic-flow cues without any need for reference frames or accelerometers"
Bioinspiration & Biomimetics (IOP) 10, 026003 doi: 10.1088/1748-3182/10/2/026003
Article selected in the "Bioinspiration & Biomimetics Highlights of 2015"
One of the 10 papers of the "Bioinspiration & Biomimetics 10th anniversary collection"

[8] D. Floreano, R. Pericet-Camara, S. Viollet, **F. Ruffier**, A. Brückner, R. Leitel, W. Buss, M. Menouni, F. Expert, R. Juston, M. K. Dobrzynski, G. L'Eplattenier, F. Recktenwald, H. A. Mallot, N. Franceschini (2013) (IF: 9,8) **Open access**
"Miniature curved artificial compound eyes"
Proc. of National Academy of Sciences of USA, PNAS, 110(23):9267-72 doi: 10.1073/pnas.1219068110

[9] N. Franceschini, **F. Ruffier**, J. Serres (2007) (IF: 10,5) **Open access**
"A bio-inspired flying robot sheds light on insect piloting abilities"
Current biology, 17:329-335 doi: 10.1016/j.cub.2006.12.032

[10] **F. Ruffier**, N. Franceschini (2005)
"Optic flow regulation: the key to aircraft automatic guidance"
Robotics and Autonomous Systems, 50:177-194 doi : 10.1016/j.robot.2004.09.016

PhD Students

3 Current PhD Students:

- *Victor Boutin* (Dir. L. Perrinet, Superv. F. Ruffier), 2016-..., *1 peer-reviewed conference paper (more in Prep.)*

- *Vladislav Tempez* (Dir. JB Mouret, Co-Dir. F. Ruffier), sept 2018-…

- *Mathieu Thomas* (Dir. F. Ruffier, Co-Dir. A. Morice, Superv. T. Rakotomamonjy), 2018-…

7 Previous PhD Students:

- Fabien COLONNIER, PhD started in Nov. 2012 & defended on April 2017 (Dir. S. Viollet, Co-Dir. F. Ruffier), 4 journal articles, 2 peer-reviewed conf. papers, now Postdoc at Temasek Labs, Nat. University of Singapore,

- Stefano MAFRICA, PhD started in April 2013 & defended on July 2016 (Dir. F. Ruffier, Co-Superv. A. Servel), 2 journal articles, 2 peer-reviewed conf. papers, 2 patents filed, now R&D Engineer at PSA Peugeot Citroën Group,

- Guillaume SABIRON, PhD started in Oct. 2011 & defended on Nov. 2014 (Dir. F. Ruffier), ***2015 ISAE-SUPAERO Foundation PhD award****, now Research Engineer at IFPEN France, 2 journal articles and 3 peer-reviewed conf. papers,*

- Fabien EXPERT, PhD started in Oct. 2009 & defended on Oct. 2013 (Dir. F. Ruffier), ***2014 G. Giralt European PhD award in Robotics (eu-Robotics) & 2013 2nd Prize (ex aequo) of the French Robotics Research Association (GDR-Robotique)****, now CTO at Wandercraft France, 5 journal articles, 6 peer-reviewed conf. papers, 2 patents filed & awarded,*

- Frédéric ROUBIEU, PhD started in Jan. 2010 & defended on July 2013 (Dir. S. Viollet, Co-Dir. F. Ruffier), CEO of Baby Montessori, 3 journal articles and 3 peer-reviewed conference papers,

- Geoffrey PORTELLI, PhD started in Oct 2006 & defended on Sept. 2011 (Dir N. Franceschini, Superv. F. Ruffier), now Postdoc at Biovision team, Inria Sophia Antipolis France, 3 journal articles,

- Julien SERRES, PhD started in Oct 2003 & defended on July 2008 (Dir N. Franceschini, Superv. F. Ruffier), ***2008 2nd Prize (ex aequo) of the French Robotics Research Association (GDR-Robotique),*** *now MCF at Aix-Marseille University, France, 3 journal articles and 3 peer-reviewed conference papers,*

8 research grants as Principal Investigator (PI) since 2013

- PI of technological transfer project entitled "Sensors fusion" (2018-2019) with SATT SE (budget: 20k€) (*ongoing*)

- PI of PhD project with ONERA-DGA (2018-2021) on visual assistance for helicopter deck landing (budget: 108k€ including PhD salary) (*ongoing*)

- PI of AVIsion project (2017-2017), MI CNRS - *Défi Instrumentation aux Limites*. The goal of the *AVIsion* project is to capture the visual cues used by birds, project together with *CEFE*, Montpellier and *Technosmart*, Italy (budget: 14k€).

- PI of AviMod project (2016-2017), MI CNRS - PEPS ExoMod. The goal of the AviMod project is to better understand visuomotor mechanism of birds, project with CEFE, Montpellier and Lund Univ. (budget: 2x20k€).

- PI of the PhD thesis under CIFRE industrial research agreement (including support contract) (Avril 2013 – Avril 2016) in the framework of the open-lab with PSA Peugeot Citroën on the bio-inspired sensors for automotive (budget: 160k€).

- PI of the *Quadmorphing* project with Carnot STAR Institute (2015), (budget: 75k€ including the financial support of an engineer during 10 months).

- PI of PhD project with NPI-ESA (European Space Agency) entitled: Design of a bio-inspired autopilot for safe and soft lunar landing, (01/09/11 - 01/09/14) (budget: 180k€).

- PI of the OptiLander project (04/11 - 04/13), PEPS CNRS INSIS. The goal of the Optilander project is to simulate a moon landing based on optic flow measurement in collaboration with ONERA (budget: 20k€).

Co-PI or Workpackage responsibilities in 6 other recent research projects (since 2013)

- Co-PI of the « Locabots » project (2017), PEPS INS2I OCAAA on the control and the localization of aerial and terrestrial robotic system with Prof. Maan El Badaoui El Najjar (Crystal Lab, CNRS University of Lille) (budget 20keuros and a 6-month contract for an engineer at ISM Marseille).

- Co-PI of the PhD thesis including its support contract (2016-2019) COFUND H2020 (Doc2Amu program) on the capture of the hand movement by a miniature drone with Laurent Perrinet (budget: 140k + 60k€).

- Co-PI of a Maturation project entitled « Eye-ring » (01/07/2015 - 31/12/2016) with *Technivue* startup, project funded by SATT-SE (budget de 110k€) (PI : S. Viollet, F. Ruffier).

- Co-PI of the ISM chapter called « Flying Arena » of Robotex-Equipex project (budget of 350k€) part of the French national program "Investing for the Future": A flying arena was equipped with 17 Vicon cameras for trajectory monitoring of miniature drones. The regional council funded also such (100k€).

- Responsible for the robotic Workpackage of the IRIS project (01/01/2013 - 30/06/2016), ANR (French National Agency for Research) ; Project obtained in 2012 with the university of Burgundy, the CEA (Nano-Innov') and the NOVADEM startup (PI: S. Viollet) (budget : 350k€ for the ISM part).

- Responsible for the robotic Workpackage of ICT/FET open European project entitled CURVACE (2010 - 2013), Conception and realization of an artificial compound eyes for mobile and aerial robots (ISM PI: S. Viollet); Project obtained in 2009 in collaboration with EPFL (Project Coordinator: D. Floreano), Fraunhofer Institute of Jena and the university of Tübingen (budget of 350k€ for the ISM part).