

Fabien COLONNIER
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SINGAPORE
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30 years old
Car driving license

Research Scientist
Temasek Lab. @ NUS

Employment History

- **Research scientist** Singapore
Neuromorphic group at Temasek Lab. @ NUS 2017 - today
 - Started to work on Spiking Neural Network for robotic Navigation
 - Worked on algorithms for Visual Odometry and obstacle avoidance using event-based sensors
 - Involved in aerial and ground robot designs
- **PhD student** Marseille, FR
Biorobotics team at the Institute of Movement Sciences, Aix-Marseille University 2012 - 2017
 - Designed bio-inspired visual algorithm for target tracking application and visual odometry
 - Implemented of a controller for mobile robot positionning
 - Involved in the RT-MaG project: a Matlab toolbox to program Real-Time application on Computer-on-Module running a Linux OS

Education

- **PhD in bio-inspired robotics** Marseille, FR
Biorobotics team at the Institute of Movement Sciences, Aix-Marseille University 2017
 - Thesis title: *Hyperacute artificial compound eye: robotic applications to Stabilization and Pursuit*
- **MSc in Automotive engineering with a specialization in Embedded Systems** Laval, FR
ESTACA, a transport engineering school (www.estaca.fr) 2012

Computer skills

- **Programming Languages**
 - Expert: C, Matlab, \LaTeX
 - Intermediate: C++, VBA (macro Excel)
- **Embedded System**
 - Linux programming: ROS, Git
 - Embedded Linux (Yocto Project, bitbake, Preempt-RT, Xenomai)
 - Computer-on-Module (Gumstix, Raspberry Pi)
 - Microcontrollers programming (PIC Microchip, arduino)
- **Others:** Microsoft Office Suite, Adobe Premier, Inkscape

Languages

- **French:** Mother tongue
- **English:** Fluent (TOEIC 920/990 in 2010)
- **German:** Basic
- **Japanese:** Beginner

Interests & Activities

- **Sport:** Running (Semi-marathon and trail running), swimming and rock climbing
- **Others:** Interested in mechanics (car maintenance, motorbike reconditioning) and DIY

Publications

• Journals

F. Colonnier, S. Ramírez-Martinez, S. Viollet and F. Ruffier, (2019), "A bio-inspired sighted robot chases like a hoverfly", *Bioinspiration & Biomimetics*

T. Raharijaona, R. Mawonou, T.V. Nguyen, **F. Colonnier**, M. Boyron, J.Diperi and S. Viollet, (2017), "Local Positioning System Using Flickering Infrared LEDs", *Sensors MDPI*

F. Colonnier, A. Manecy, R. Juston, H. Mallot, R. Leitel, D. Floreano and S. Viollet, (2015). "A small-scale hyperacute compound eye featuring active eye tremor: application to visual stabilization, target tracking, and short-range odometry", *Bioinspiration & Biomimetics*

S. Viollet, S. Godiot, R. Leitel, W. Buss, P. Breugnon, M. Menouni, R. Juston, F. Expert, **F. Colonnier**, G. L'Eplattenier, A. Brückner, F. Kraze, H. Mallot, N. Franceschini, R. Pericet-Camara, F. Ruffier, and D. Floreano, (2014). "Hardware Architecture and Cutting-Edge Assembly Process of a Tiny Curved Compound Eye", *Sensors MDPI*

F.L. Roubieu, J.R. Serres, **F. Colonnier**, N. Franceschini, S. Viollet and F. Ruffier, (2014). "A biomimetic vision-based hovercraft accounts for bees' complex behaviour in various corridors", *Bioinspiration & Biomimetics*

• Patents

S. Viollet, **F. Colonnier** and E. Vanhoutte, "Système de mesure de la distance d'un obstacle par flux optique", *European patent* (published n° WO2017FR52739)

• Conferences

F. Colonnier, L. Della Vedova, Rodney Swee Huat Teo and Garrick Orchard, "Visual Odometry and Low Optic Flow Measurement by Means of a Vibrating Artificial Compound Eye", Australasian conference on Robotics and Automation (ACRA), Lincoln, New Zealand, December 4-6, 2018

F. Colonnier, A. Manecy, R. Juston and S. Viollet, "Visual Odometry and Low Optic Flow Measurement by Means of a Vibrating Artificial Compound Eye", pages 153-163. Biomimetic and Biohybrid Systems: 4th International Conference, Living Machines 2015, Barcelona, Spain, July 28 - 31, 2015, Proceedings *Springer International Publishing*

Valentino Braitenberg award - Best talk prize