



Julien Dupeyroux

MSc, Ph.D.



Birth: 20 October, 1991



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About me

Postdoctoral researcher at the Micro Air Vehicle Laboratory (MAVLab), at the Delft University of Technology. I am involved in the development of insect-inspired, parsimonious, autonomous navigation systems for both indoor and outdoor exploration. My strategy makes use of event-based cameras and spiking neural networks to allow a swarm of tiny drones to navigate autonomously and safely.

Language skills: French (native), English (C1-C2), Spanish (A1-A2).

Skills

Robotics

Embedded Electronics

Matlab

Programming C & C++

Computer Vision

Experience

- since 2019 Postdoctoral researcher at the Micro Air Vehicle laboratory
Section Control and Simulation - Department Control and Operations
Faculty of Aerospace Engineering, Delft University of Technology
- 2015-2018 PhD fellow in Biorobotics
Supervisors : Stéphane Viollet and Julien Serres.
ISM - Biorobotics Lab., CNRS, Aix Marseille Univ., Marseille, France.
- 2015 Research Internship - 9 months
Hand gripping ability development for a humanoid hydraulic robot.
ETIS CNRS UMR 8051 - Neurocybernetics Team, Cergy, France.
- 2014 Research Internship - 2 months
C# drivers writting, and neural control of a humanoid robotic hand.
ETIS CNRS UMR 8051 - Neurocybernetics Team, Cergy, France.
- 2013 Research Internship - 2 months
Stereo-vision for obstacles' avoidance applied to robotic arms.
ETIS CNRS UMR 8051 - Image Processing Team, Cergy, France.

Education

- 2015-2019 Ph.D. degree in Bio-Inspired Robotics
Bio-inspired autonomous navigation applied to a hexapod robot.
Aix-Marseille University, Institute of Movement Sciences, Biorobotics
Dpt., Marseille, France.
- 2017 Neuromorphic Vision Engineering Workshop
Telluride, Colorado, USA.
- 2014-2015 MSc Degree in Artificial Intelligence and Robotics
University of Cergy-Pontoise, Paris Area, France.
- 2012-2015 MSc Degree in Electronics and Computer Sciences
ENSEA, French Engineering School, Paris Area, France.

Teaching Activities

- 2020 Supervision of 4 master students' theses
TU Delft - Faculty of Aerospace Engineering
MAVLab, Delft, The Netherlands.
- 2018 Supervision of a graduate student: Sean Lapalus (EMSE Gardanne)
Real-time optic flow for obstacle detection and avoidance.
ISM Biorobotics Lab., Marseille, France.
- 2015-2018 Teacher in Signal Processing, Motion Capture and Web Design
64hours/year for master students
Aix-Marseille University, Faculty of Sport Sciences, Marseille, France.

Selected Publications

- 2020 *Dispositif de détection du cap d'un véhicule par détection d ephotons polarisés linéairement.* Brevet FR 3 086 088.
- 2019 *AntBot: A six-legged walking robot able to home like desert ants in outdoor environments.* Science Robotics, 4(27), eaau0307.
- 2019 *Polarized skylight-based heading measurements: a bio-inspired approach.* Journal of the Royal Society Interface, 16(150), 20180878.
- 2019 *An ant-inspired celestial compass applied to autonomous outdoor robot navigation.* Robotics and Autonomous Systems, 117, 40-56.

Awards

- 2019 Winner of the Embedded IoT Prize – Embedded France
- 2018 Best paper award – Living Machines Conference, Paris, France.
- 2017 Best paper award – European Conf. on Mobile Robotics, Paris, France.
- 2014 Merit scholarship (University of Cergy-Pontoise, 7000€)