



Julien Dupeyrou

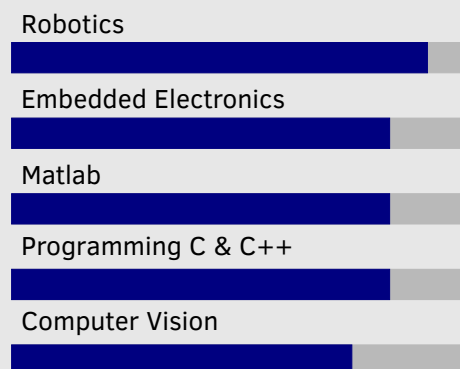
PhD Candidate

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About me

Alumnus from the ENSEA (French 'Grande Ecole', Engineering School) where I got a MSc degree in Electronics and Informatics engineering in 2015. I have a MSc degree in Bio-Inspired Robotics and Artificial Intelligence (Cergy-Pontoise University, 2015). I am following a PhD program since September 2015 in Marseille, France at the Biorobotics Dpt of the Institute of Movement Sciences, CNRS/Aix Marseille University. My research topics focus on navigation skills in walking autonomous robotic systems taking inspiration from the desert ants. My strategy uses minimalist optic sensors and low computation processes. Language skills: French (native), English (C1), Spanish (A2).

Skills



Education

- 2017 Neuromorphic Vision Engineering Workshop
Format: background lectures on systems and cognitive neuroscience, tutorials on emerging hardware design, mobile robots, and projects.
Telluride, Colorado, USA.
- 2014-2015 MSc Degree in Artificial Intelligence and Robotics (Rank: 2nd)
Disciplines : Neural Networks, Machine-learning, Computer Vision, Algorithms, HMI, AI, Robotics, Wavelets and Signal Processing.
University of Cergy-Pontoise, Paris Area, France.
- 2012-2015 MSc Degree in Electronics and Informatics (Rank: 1st)
Disciplines : Analog and Numerical Electronics, Automation, Robotics, Signal & Image Processing, HMI, C/C++/Java, Med. Physics.
ENSEA, French Engineering School, Paris Area, France.

Experience

- since 2015 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 writing, 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.

Teaching Activities

- 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.
- 2018 Supervision of a graduate student: Sean Lapalus (EMSE Gardanne)
Real-time optic flow for obstacle detection and avoidance.
ISM Biorobotics Lab., Marseille, France.

Publications

- 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), p. 20180878.
- 2018 *A hexapod walking robot mimicking navigation strategies of desert ants cataglyphis.* V. Vouloutsi et al. (Eds.): Living Machines 2018, Paris, France, pp. 145-156.
- 2018 *M²APix: a bio-inspired auto-adaptive visual sensor for robust ground height estimation.* In proc. of Circuits and Systems ISCAS'18, Florence, Italy, p. 1-4.
- 2017 *A novel insect-inspired optical compass sensor for an hexapod walking robot.* In proc. of IEEE/RSJ IROS Conference 2017, Vancouver, Canada, pp. 3439-3445.
- 2017 *A bio-inspired celestial compass applied to an ant-inspired robot for autonomous navigation.* In proc. of IEEE EECMR Conference 2017, Paris, France, p. 119-124.
- 2017 *Hexabot : a small 3D-printed six-legged walking robot designed for desert ant-like navigation tasks.* In proc. of IFAC Conference 2017, Toulouse, France, pp. 1628-1631.

Awards

- 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€)