Johann Laconte

Ph.D. Student, Post-Doc Applicant

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Education

2018–2021 **Ph.D. in Robotics**, *Clermont Auvergne University (UCA), Laval University*.
Theoretical framework for risk assessment in occupancy grids
Supervisors: Romuald Aufrère (UCA), François Pomerleau (Laval University), Roland Chapuis (UCA), Christophe Debain (National Research Institute for Agriculture, Food and the Environment)

2017–2018 **Master Degree in Robotics**, *Clermont Auvergne University*.
Ranked first of the class.

2015–2018 **Engineering Degree in Computer Science and Modeling**, *Institut Supérieur d'Informatique, de Modélisation et de leurs Applications*.
Ranked second of the class

Professional activities

2020 **Reviewing Services**.
Reviewing of 3 conference papers and 1 journal paper.

2020 **Research Internship**, *Laval University*, Quebec City, Canada.
Collaboration with the Northern Robotics Laboratory (Norlab), leading to the publications of Baril *et al.* [3], Vaidis *et al.* [7].

2019 **Winter School**, *National Institute for Research in Digital Science and Technology (INRIA)*, Sophia Antipolis, France.
One week winter school covering the basic in both mobile and manipulative robotics.

2018 **Research Internship**, *Laval University*, Quebec City, Canada.
Investigation of the measurements bias coming from a Light Detection and Ranging (lidar) sensor. Modeling of the return waveform and design of an experimental setup. Results of the internship were published to the 2019 International Conference on Robotics and Automation (ICRA19).

2017 **Internship**, *Thales*, Elancourt, France.
Evaluations and improvements of state-of-the-art LIDAR Simultaneous Localization And Mapping (SLAM) algorithms.

Grants and Distinctions

2020 **Best Robot Vision Paper Award**, *Conference on Robots and Vision (CRV)*.
For the paper D. Baril *et al.*, "Evaluation of skid-steering kinematic models for subarctic environments," in *2020 17th Conference on Computer and Robot Vision (CRV)*, IEEE, 2020, pp. 198–205

2020 **Finalist for Best Student Paper Award**, *International Conference on Control, Automation, Robotics and Vision (ICARCV)*.
For the paper A. Kasmi *et al.*, "An information driven approach for ego-lane detection using lidar and openstreetmap," in *2020 16th International Conference on Control, Automation, Robotics and Vision (ICARCV)*, IEEE, 2020, pp. 522–528

2018 **Doctoral Research Grant**, *Innovative Mobility: Smart and Sustainable Solutions (IMOBS3) Program*.

2018 **Graduate Research Grant**, *WOW! Wide Open to the World Program*.

Languages

English Fluent, TOEIC certificate
French Native Speaker
Chinese Basic Level, HSK2 certificate
German Notions

Teaching

2018–2021 **Digital Signal Processing**, *Graduate course*.
Graduate course about Discrete Fourier Transform, Z-Transform, Signal Filtering and their applications.

2018–2021 **Control Theory**, *Graduate course*.
Graduate course about Laplace transform, regulation, modeling and analysis of continuous systems.

2018–2021 **Projects Supervision**, *Graduate students*.
Supervision of four robotics graduate projects of 60 or 120 hours.

2020 **Internship Mentoring**, *Ph.D. candidate student*.
Mentoring of a graduate student working on path-planning algorithms.

Scientific Publications

[1] **Laconte, Johann**, C. Debain, R. Chapuis, F. Pomerleau, and R. Aufrère, "Lambda-field: A continuous counterpart of the bayesian occupancy grid for risk assessment," in *2019 International Conference on Intelligent Robots and Systems (IROS)*, 2019, pp. 167–172.

[2] **Laconte, Johann**, S.-P. Deschênes, M. Labussière, and F. Pomerleau, "Lidar measurement bias estimation via return waveform modelling in a context of 3d mapping," in *2019 International Conference on Robotics and Automation (ICRA)*, IEEE, 2019, pp. 8100–8106.

[3] D. Baril, V. Grondin, S.-P. Deschênes, **Laconte, Johann**, M. Vaidis, V. Kubelka, A. Gallant, P. Giguere, and F. Pomerleau, "Evaluation of skid-steering kinematic models for subarctic environments," in *2020 17th Conference on Computer and Robot Vision (CRV)*, IEEE, 2020, pp. 198–205.

[4] A. Kasmi, **Laconte, Johann**, R. Aufrère, D. Denis, and R. Chapuis, "End-to-end probabilistic ego-vehicle localization framework," *IEEE Transactions on Intelligent Vehicles*, 2020.

[5] A. Kasmi, **Laconte, Johann**, R. Aufrère, R. Theodose, D. Denis, and R. Chapuis, "An information driven approach for ego-lane detection using lidar and openstreetmap," in *2020 16th International Conference on Control, Automation, Robotics and Vision (ICARCV)*, IEEE, 2020, pp. 522–528.

[6] M. Labussière, **Laconte, Johann**, and F. Pomerleau, "Geometry preserving sampling method based on spectral decomposition for large-scale environments," *Frontiers in Robotics and AI*, 2020.

[7] M. Vaidis, **Laconte, Johann**, V. Kubelka, and F. Pomerleau, "Improving the iterative closest point algorithm using lie algebra," *2020 International Conference on Intelligent Robotics and Systems (IROS) Workshop "Bringing geometric methods to robot learning, optimization and control Workshop"*, 2020.

[8] **Laconte, Johann**, A. Kasmi, F. Pomerleau, R. Chapuis, L. Malaterre, C. Debain, and R. Aufrère, "Lambda-field: A continuous counterpart of the bayesian occupancy grid for risk assessment and safe navigation," *Submitted to the International Journal of Robotics Research (IJRR)*, 2021.

[9] **Laconte, Johann**, E. Randriamiarintsoa, A. Kasmi, F. Pomerleau, R. Chapuis, C. Debain, and R. Aufrère, "Dynamic lambda-field: A counterpart of the bayesian occupancy grid for risk assessment in dynamic environments," in *Submitted to the 2021 International Conference on Intelligent Robots and Systems (IROS)*, 2021.