Jean-François Lalonde

Curriculum Vitae

1065 ave de la Médecine
Québec QC G1V 0A6
☎ *(418) 656-2131 #2659*
✉ *jflalonde@gel.ulaval.ca*
www.jflalonde.ca

EDUCATION

2011 **Ph.D. in Robotics**, Carnegie Mellon University.
Thesis: Understanding and Recreating Visual Appearance Under Natural Illumination

2006 **M.S. in Robotics**, Carnegie Mellon University.
Thesis: Data Structure for Efficient Dynamic Processing in 3-D

2004 **B.S. in Computer Engineering (hons.)**, Laval University.

PROFESSIONAL APPOINTMENTS

2013–... **Assistant Professor**, *Affiliated to the NSERC/Creaform Industrial Research Chair on 3D Scanning: CREATION 3D*, Electrical and Computer Engineering Department, Laval University.

2012–2013 **Post-doctoral Associate**, Disney Research (Walt Disney Imagineering).

PUBLICATIONS

Refereed Journal Articles

[1] M. Tan, J.-F. Lalonde, L. Sharan, H. Rushmeier, and C. O'Sullivan. "The perception of lighting inconsistencies in composite outdoor scenes". In: *ACM Transactions on Applied Perception* 12.4 (Aug. 2015).

[2] J.-F. Lalonde, A. A. Efros, and S. G. Narasimhan. "Estimating the natural illumination conditions from a single outdoor image". In: *International Journal of Computer Vision* 98.2 (June 2012), pp. 123–145.

[3] J.-F. Lalonde, S. G. Narasimhan, and A. A. Efros. "What do the sun and the sky tell us about the camera?" In: *International Journal of Computer Vision* 88.1 (May 2010), pp. 24–51.

[4] R. Unnikrishnan, J.-F. Lalonde, N. Vandapel, and M. Hebert. "Scale selection for geometric fitting in noisy point clouds". In: *International Journal of Computational Geometry & Applications* 20.5 (Oct. 2010), pp. 543–575.

[5] J.-F. Lalonde, A. A. Efros, and S. G. Narasimhan. "Webcam Clip Art: appearance and illuminant transfer from time-lapse sequences". In: *ACM Transactions on Graphics (SIGGRAPH Asia 2009)* 28.5 (Dec. 2009), 131:1–131:10.

[6] M. H. Nguyen, J.-F. Lalonde, A. A. Efros, and F. de la Torre. “Image-based shaving”. In: *Computer Graphics Forum Journal (Eurographics 2008)* 27.2 (2008), pp. 627–635.

[7] J.-F. Lalonde, N. Vandapel, and M. Hebert. “Data structures for efficient dynamic processing in 3-d”. In: *International Journal of Robotics Research* 26.8 (Aug. 2007).

[8] J.-F. Lalonde, D. Hoiem, A. A. Efros, C. Rother, J. Winn, and A. Criminisi. “Photo Clip Art”. In: *ACM Transactions on Graphics (SIGGRAPH 2007)* 26.3 (Aug. 2007).

[9] J.-F. Lalonde, N. Vandapel, D. F. Huber, and M. Hebert. “Natural terrain classification using three-dimensional ladar data for ground robot mobility”. In: *Journal of Field Robotics* 23.10 (Oct. 2006), pp. 839–861.

Refereed Conference Papers

[1] F. Labrie-Larrivée, D. Laurendeau, and J.-F. Lalonde. “Depth texture synthesis for realistic architectural modeling”. In: *Proceedings of the Computer and Robot Vision Conference*. 2016.

[2] M. Granados, T. O. Aydın, J. R. Tena, J.-F. Lalonde, and C. Theobalt. “Contrast use metrics for tone mapping images”. In: *IEEE International Conference on Computational Photography*. 2015.

[3] M. Granados, T. O. Aydın, J. R. Tena, J.-F. Lalonde, and C. Theobalt. “HDR image noise calibration for denoising tone mapped images”. In: *Proceedings of the European Conference on Visual Media and Production*. 2015.

[4] Y. Hold-Geoffroy, J. Zhang, P. F. U. Gotardo, and J.-F. Lalonde. “What is a good day for outdoor photometric stereo?” In: *IEEE International Conference on Computational Photography*. 2015.

[5] Y. Hold-Geoffroy, J. Zhang, P. F. U. Gotardo, and J.-F. Lalonde. “x-hour outdoor photometric stereo”. In: *International Conference on 3-D Vision*. 2015.

[6] M. Tan, J.-F. Lalonde, L. Sharan, H. Rushmeier, and C. O’Sullivan. “The perception of lighting inconsistencies in composite outdoor scenes”. In: *ACM Symposium on Applied Perception*. 2015.

[7] J.-F. Lalonde and I. Matthews. “Lighting estimation in outdoor image collections”. In: *International Conference on 3D Vision*. 2014.

[8] J.-F. Lalonde, A. A. Efros, and S. G. Narasimhan. “Detecting ground shadows in outdoor consumer photographs”. In: *European Conference on Computer Vision*. Springer-Verlag, Sept. 2010.

[9] J.-F. Lalonde, A. A. Efros, and S. G. Narasimhan. “Estimating natural illumination from a single outdoor image”. In: *IEEE International Conference on Computer Vision*. 2009.

[10] J.-F. Lalonde, S. G. Narasimhan, and A. A. Efros. “What does the sky tell us about the camera?” In: *European Conference on Computer Vision*. 2008.

[11] N. Heckman, J.-F. Lalonde, N. Vandapel, and M. Hebert. “Potential negative obstacle detection by occlusion labeling”. In: *IEEE/RSJ International Conference on Intelligent Robots and Systems*. 2007, pp. 2168–2173.

[12] J.-F. Lalonde and A. A. Efros. “Using color compatibility for assessing image realism”. In: *IEEE International Conference on Computer Vision*. 2007, pp. 1–8.

[13] J.-F. Lalonde, C. Bartley, and I. Nourbakhsh. “Mobile robot programming in education”. In: *IEEE International Conference on Robotics and Automation*. May 2006.

[14] R. Unnikrishnan, J.-F. Lalonde, N. Vandapel, and M. Hebert. “Scale selection for the analysis of point-sampled curves”. In: 2006, pp. 1026–1033.

[15] J.-F. Lalonde, N. Vandapel, and M. Hebert. “Data structure for efficient processing in 3-d”. In: *Robotics: Science and Systems I*. MIT Press, June 2005.

[16] J.-F. Lalonde, R. Unnikrishnan, N. Vandapel, and M. Hebert. “Scale selection for classification of point-sampled 3d surfaces”. In: *International Conference on 3-D Digital Imaging and Modeling*. 2005, pp. 285–292.

[17] G. Godin, J.-F. Lalonde, and L. Borgeat. “Projector-based dual-resolution stereoscopic display”. In: *IEEE Virtual Reality*. IEEE Computer Society, 2004, pp. 223–224.

[18] J. Vignola, J.-F. Lalonde, and R. Bergevin. “Progressive human skeleton fitting”. In: *Conference on Vision Interface*. 2003.

Refereed Workshop Papers

[1] S. Michaud, J.-F. Lalonde, and P. Giguère. “Towards characterizing the behavior of LiDARs in snowy conditions”. In: *Proceedings of the 7th Workshop on Planning, Perception and Navigation for Intelligent Vehicles*. 2015.

[2] G. Godin, J.-F. Lalonde, and L. Borgeat. “Dual-resolution stereoscopic display with scene-adaptive fovea boundaries”. In: *International Immersive Projection Technology Workshop*. 2004.

Refereed Posters

[1] M. Garon, P.-O. Boulet, J.-P. Doiron, L. Beaulieu, and J.-F. Lalonde. “Real-time high resolution 3D data on the HoloLens”. In: *International Symposium on Mixed and Augmented Reality*. 2016.

[2] Y. Hold-Geoffroy, J. Zhang, P. F. U. Gotardo, and J.-F. Lalonde. “x-hour outdoor photometric stereo”. In: *International Conference on Computational Photography*. 2016.

[3] J.-F. Lalonde, A. A. Efros, and S. G. Narasimhan. "Estimating the natural illumination conditions from a single outdoor image". In: *International Conference on Computational Photography*. 2011.

Patents

[1] M. Granados, R. Tena, T. O. Aydin, J.-F. Lalonde, C. Theobalt, and I. Matthews. "High dynamic range and tone mapping imaging techniques". Patent 9,275,445 B2 (US). Mar. 2016.

[2] A. N. Stein and J.-F. Lalonde. "Oriented, spatio-spectral illumination constraints for use in an image process". Patent 8,934,735 B2 (US). Jan. 2015.

[3] J.-F. Lalonde. "Spatially-varying log-chromaticity normals for use in an image process". Patent 8,842,910 B2 (US). Sept. 2014.

[4] J.-F. Lalonde. "Weighted entropy minimization for optimizing a log-chromaticity normal for use in an image process". Patent 8,811,732 B2 (US). Aug. 2014.

[5] J.-F. Lalonde, P. Buehler, B. Maxwell, C. Smith, A. Stein, and R. Friedhoff. "Log-chromaticity clustering pipeline for use in an image process". Patent 8,849,018 B2 (US). Sept. 2014.

Patent Applications

[1] J.-F. Lalonde and I. Matthews. "Predicting a light probe from an outdoor image". Patent Application 14/091,270 (US). 2013.

[2] R. C. Coulter, R. Gross, J.-F. Lalonde, and B. Simard. "Robotic management of patient care logistics". Patent Application 12/791,208 (US). 2010.

[3] R. C. Coulter, R. Gross, J.-F. Lalonde, and B. Simard. "System and method of patient flow and treatment management". Patent Application 20110054946 (US). 2009.

HONORS AND AWARDS

2016 Nominated for Best Teacher Award, IEEE student branch

2015 Best Paper (Runner Up) Award, 3DV 2015

2015 Star Professor Award, School of Science and Engineering

2015 Nominated for Best Teacher Award, ECE dept., "Gala du Mérite de l'AESGUL"

2015 Outstanding Reviewer Award, CVPR 2015

2014 Nominated for Best Teacher Award, IEEE student branch

2014 Outstanding Reviewer Award, CVPR 2014

2011 CMU School of Computer Science Distinguished Dissertation Award

2009–2011 Microsoft Research Ph.D. Fellowship

2006–2009 Ph.D. Scholarship, Fonds de Recherche sur la Nature et les Technologies (FQRNT)

2004–2006 M.S. Scholarship, Fonds de Recherche sur la Nature et les Technologies (FQRNT)

2003 Undergraduate Research Scholarship, National Research Council (NRC), Canada

2003 Best Teaching Assistant Award (undergraduate C++ class), IEEE Student Branch

2001–2002 Undergraduate Research Scholarship, Natural Science and Engineering Research Council (NSERC)

2000 Admission Scholarship, Alumni association, Laval University

GRANTS

2016 Unrestricted gift for research activities, Adobe Systems inc.

2016 Educational innovation program, Laval University

2016 MITACS Accelerate IT06791, MITACS and Frima Studio inc.

2016 NSERC ENGAGE EGP 491144-15, in collaboration with Bulldozer inc.

2015–2016 NSERC ENGAGE EGP 485663-15, in collaboration with Mentum inc.

2015 Nvidia Hardware grant for a Tesla K40

2015–2017 FRQ-NT New Researcher Grant 2016NC189939

2014–2019 NSERC Discovery GRANT RGPIN-2014-05314

TALKS

Invited talks

04/2016 Éclairage d'objets virtuels 3D : approches et perspectives, "Journées Aux Frontières du Numérique", ITIS, Quebec City, Canada

11/2015 Data-driven Modeling of Outdoor Illumination, University College, London, UK

10/2015 Data-driven Modeling of Outdoor Illumination, McGill University, Montreal, Canada

10/2015 Computational Photography Overview, Algolux, Montreal, Canada

09/2015 Computational Photography Tutorial, Invited tutorial speaker, International Conference on Image Processing, Quebec City, Canada

06/2015 Richer Models for Outdoor Lighting, Invited speaker, Computer and Robot Vision Conference, Halifax, Canada

03/2015 Richer Models for Outdoor Lighting Synthesis and Understanding, Uber Advanced Technology Center, Pittsburgh, USA

08/2014 New Faculty Welcoming, Laval University

05/2014 Special Effects in your Photos, REPARTI workshop, Quebec, Canada

11/2012 Understanding Illumination in Natural Images, SCS Distinguished Dissertation Award Lecture, Pittsburgh, USA

09/2012 Understanding Illumination in Natural Images, National Robotics Engineering Consortium, Pittsburgh, USA

04/2012 Understanding and Recreating Visual Appearance in a Single Outdoor Photograph, Disney Research Pittsburgh, USA

04/2012 Panelist, Quality of Life Technology Industry Panel, Carnegie Mellon University

10/2010 Estimating Illumination Conditions from a Single Outdoor Image, Laval University, Quebec, Canada

08/2010 Understanding and Recreating Visual App. under Natural Illumination, Tandent Vision Science, Pittsburgh, USA

05/2010 Webcam Clip Art, FMX, Stuttgart, Germany

06/2008 Capturing the Illumination of a Scene: 2 Data-driven Approaches, Laval University, Quebec, Canada

Conference talks

11/2015 HDR Image Noise Estimation for Denoising Tone Mapped Images, Conf. on Visual Media and Production, London, UK

04/2015 Contrast Use Metrics for Tone Mapping Images, Intl. Conf. on Computational Photography, Houston, TX, USA

12/2009 Webcam Clip Art, ACM SIGGRAPH Asia, Yokohama, Japan

10/2009 Estimating Natural Illumination from a Single Outdoor Image, ICCV, Kyoto, Japan

08/2007 Photo Clip Art, ACM SIGGRAPH, San Diego, CA, USA

08/2006 Mobile Robot Programming in Education, ICRA, Orlando, FL, USA

06/2005 Data Structure for Efficient Processing in 3-D, RSS, Boston, MA, USA

06/2005 Scale Selection for Classification of Point-sampled 3-D Surfaces, 3DIM, Ottawa, Canada

Local talks

11/2015 Repousser les Limites de la Création 3D: Des Effets Spéciaux dans vos Photos, École de Design, Quebec City, Canada

10/2015 Repousser les Limites de la Création 3D: Lumières, Météo, et Objets Virtuels, ITIS Seminar Series, Quebec City, Canada

03/2014 Daylight and Material Estimation from Photo Collections, REPARTI Seminar, Laval University

11/2013 Point-and-shoot Sky Probes, REPARTI Seminar, Laval University

01/2011 Understanding and Recreating Visual Appearance Under Natural Illumination, Carnegie Mellon University

11/2008 What Does the Sky Tell Us About the Camera?, VASC Seminar, Carnegie Mellon University

TEACHING EXPERIENCE

Laval University

2014–2016 Computational photography

2015–2016 Introduction to computer architecture

Carnegie Mellon University

2008–2012 Computational photography (guest lecturer, 4 lectures)

2010 Computer vision (guest lecturer)

2008–2010 Computer graphics (guest lecturer, 6 lectures)

Teaching assistantships

2007 Learning-based methods in vision, Carnegie Mellon University

2003–2004 C++ programming on Linux, Laval University *Best Teaching Assistant Award*

RESEARCH EXPERIENCE

2004–2011 **Graduate Research Assistant**, *Robotics Institute*, Carnegie Mellon University.

2003 **Undergraduate Research Assistant**, *National Research Council Canada.*

2001–2003 **Undergraduate Research Assistant**, *Computer Vision and Systems Lab.*, Laval University.

SERVICE

2015–... Ambassador to the city of Quebec, project `1000raisons.quebec`. Program launched by Quebec's Work Minister, M. Sam Hamad, with the goal of attracting international talent to Quebec City.

Program Committee, Technical Briefs and Poster programs, SIGGRAPH Asia 2015

Journal reviewer: IEEE TPAMI (2011–2014), IJCV (2010–2013), ACM TOG (2008–2015), IEEE TIP (2012–2014), JVBR (2009–2010), CGF (2008–2014), CVIU (2012–14)

Program Committee: ECCV (2010–2014), CVPR (2011–2014), ICCV (2011–2015), ICCP (2014)

External reviewer: RSS (2011), CVPR (2008–2010), ICPR (2010), ICCP (2008), ICRA (2007–2012), ICIP (2012–2014)

2009–2010 Graduate admissions committee, Robotics Institute, Carnegie Mellon University (2-year term)

MEDIA COVERAGE

10/09/2015 "Québec lance une campagne pour attirer des travailleurs", Radio-Canada

10/09/2015 "70 000 emplois à pourvoir d'ici 3 ans à Québec", Journal de Montréal

10/09/2015 "Campagne de promotion pour inciter les talents à revenir à Québec", Le Soleil

10/08/2015 "Du 3D plus vraisemblable que jamais", Fil des Événements

10/05/2015 Interview at CKRL, Quebec radio station

09/2015 “La 3D presque à portée de main”, Le magazine Contact

05/30/2015 “Un projet pour rapatrier les talents québécois de l’étranger”, Le Soleil

02/19/2015 “Pousser les limites de la création 3D”, Fil des Événements

01/31/2015 “Le Ciel de Québec inspire Disney”, Journal de Québec

01/26/2015 “Disney Research: La magie de l’image”, Impact Campus

04/15/2008 “Photo Clip Art”, CGWorld (Japan)

09/19/2007 “Instant makeup: perfect your holiday snaps”, The Independent (UK)

08/08/2007 “Photo tool could fix bad images”, BBC News (UK)

07/11/2007 “Researchers try Google approach to understanding photos”, CNet News.com (USA)

07/11/2007 “Researchers try Google photo tactic”, USAToday (USA)

07/19/2007 “Le photomontage pour les nuls”, News.fr (France)

07/15/2007 C’t - Magazin für Computertechnik (Germany)

NON-ACADEMIC WORK

2011–2012 **Computer Vision Scientist**, *Tandent Vision Science Inc.*, Pittsburgh, USA.

2006 **Software Engineer**, *Penthera Technologies Inc.*, Pittsburgh, USA.

STUDENTS

Ph.D. Students

2016–... Henrique Weber *INO Ph.D. Fellowship*

2016–... Jinsong Zhang

2014–... Marc-André Gardner *Alexander Graham Bell Canada Graduate Scholarship*

2014–... Yannick Hold-Geoffroy *FRQ-NT Ph.D. Scholarship*

M.S. Students

2015–... Mathieu Garon *Mitacs Accelerate Internship, in collaboration with Frima Studio, inc.*

2014–... Félix Labrie-Larrivée *in collaboration with Creaform, inc.*

2014–16 Sébastien Michaud

Graduate interns

2014–... Dan Calian, University College London (UK)

2014 Jinsong Zhang, Beihang University (China)

2014 Mert Kiliçkaya, Hacetteppe University (Turkey) *REPARTI Scholarship for International Internships*

2014–15 Minghui Tan, Yale (USA) *last seen at Storm8*

2013–15 Miguel Granados, Max Planck Institute (Germany) *last seen at Dacuda AG*

2013 Natasha Kholgade Banerjee, CMU (USA) *Assistant Professor at Clarkson U.*

Undergraduate interns

2016	Charles-Olivier Dufresne Camaro	*NSERC Undergraduate Research Award, in collaboration with Umanx, inc.*
2016–...	Pierre-Olivier Boulet	
2016–...	Dominic Bilodeau	
2015–16	Louis-Philippe Asselin	*Faculty of Science and Engineering Research Fellowship*
2015–16	Frédéric St-Pierre	*NSERC Undergraduate Research Award 2015–16*
2015	Julien Becirovski	
2014–15	Mathieu Garon	
2014–16	Louis-Émile Robitaille	
2014–15	Diane Fournier	*last seen at Optel Vision*
2014	Michael Monette	*last seen at EXFO*
2008	Joseph Rollo	*last seen at General Dynamics*
2007	Nicholas Heckman	*last seen at Microsoft*

LANGUAGES

French	Native
English	Excellent
Spanish	Conversational

PROFESSIONAL AFFILIATIONS

2014–... Ordre des Ingénieurs du Québec