

Jean-François Lalonde

Curriculum Vitae

Computer Vision and Systems Lab
Electrical and Computer Eng.
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EDUCATION

- 2011 **Ph.D. in Robotics**, Carnegie Mellon University
Thesis: Understanding and Recreating Visual Appearance Under Natural Illumination
Microsoft Research Fellow, School of Computer Science Distinguished Dissertation Award
- 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.)**, Université Laval

PROFESSIONAL APPOINTMENTS

- 2022–... **Full Professor**, Electrical and Computer Engineering Department, Université Laval
Associate scientific director, Institute Intelligence and Data (IID)
Member, Computer Vision and Systems Laboratory (LVSN)
Affiliated to the NSERC/Creaform Industrial Research Chair on 3D Scanning
Member, Research Center for Robotics, Vision and Machine Intelligence (CeRVIM)
Member, Big Data Research Center (CRDM)
- 2020–... **Associate researcher**, CERVO brain research center, Québec, Canada
- 2018–2022 **Associate professor**, Electrical and Computer Engineering Department, Université Laval
- 2013–2018 **Assistant professor**, Electrical and Computer Engineering Department, Université Laval
- 2016–2020 **Associate researcher**, Institut National d’Optique, Québec, Canada
- 2012–2013 **Post-doctoral associate**, Disney Research, Pittsburgh, USA

TECHNICAL ADVISORSHIP

- 2023–... **Board of directors member**, Centre en imagerie et médias interactifs (CIMMI), Québec, Canada
- 2020–... **Technical advisory board member**, Depix, Montréal, Canada
- 2022–2023 **Technical advisor**, AniML, Montréal, Canada
- 2022–2023 **Technical advisory board member**, Yokai, Paris, France
- 2017–2021 **Technical advisor**, Arcane Technologies, Québec, Canada
- 2018–2020 **Technical advisory board member**, Geomagical Labs, inc., Mountain View, USA
- 2018–2019 **Research consultant**, Facebook Reality Labs, Pittsburgh, USA
- 2013–2016 **Research consultant**, Disney Research, Pittsburgh, USA

PUBLICATIONS

Refereed Journal Articles

- [A1] Carolina Espinoza-Sanhueza, Marc Hébert, Jean-François Lalonde, and Claude MH Demers. “Dataset of images for visual and non-visual analysis of colour applications in architecture”. In: *Data in Brief* 55 (Aug. 2024).
- [A2] Philippe Lalonde, Marc Hébert, Jean-François Lalonde, Carolina Espinoza-Sanhueza, and Claude MH

- Demers. “Imagery dataset of interior and exterior northern architectural spaces for photobiological lighting analyses”. In: *Data in Brief* (2024).
- [A3] Fatemeh Nourilenjan Nokabadi, Jean-François Lalonde, and Christian Gagné. “Reproducibility study on adversarial attacks against robust transformer trackers”. In: *Transactions on Machine Learning Research* (2024).
- [A4] Yohan Poirier-Ginter, Alban Gauthier, Julien Philip, Jean-François Lalonde, and George Drettakis. “A diffusion approach to radiance field relighting using multi-illumination synthesis”. In: *Computer Graphics Forum (Eurographics Symposium on Rendering)* 43.4 (2024).
- [A5] Seyed Amin Tabatabaeifard, Jean-François Lalonde, Marc Hébert, André Potvin, and Claude M.H. Demers. “Immersive representation for visualizing surface temperature and integrative lighting in architecture”. In: *Building and Environment* 262 (Aug. 2024).
- [A6] Julie Buquet, Jocelyn Parent, Jean-François Lalonde, and Simon Thibault. “Learning-based model for spot size estimation using wide-angle design radial distortion”. In: *Optical Engineering* 62.6 (2023).
- [A7] Carolina Espinoza-Sanhueza, Marc Hébert, Jean-François Lalonde, and Claude MH Demers. “Exploring light and colour patterns for remote biophilic northern architecture”. In: *Indoor and Built Environment* (2023).
- [A8] Yannick Hold-Geoffroy, Dominique Piché-Meunier, Kalyan Sunkavalli, Jean-Charles Bazin, François Rameau, and Jean-François Lalonde. “A perceptual measure for deep single image camera and lens calibration”. In: *IEEE Transactions on Pattern Analysis and Machine Intelligence* 45.9 (Sept. 2023).
- [A9] Philippe Lalonde, Marc Hébert, André Potvin, Jean-François Lalonde, Mélanie Watchman, and Claude MH Demers. “Representing the photobiological dimension of light in northern architecture”. In: *Indoor and Built Environment* 27.6 (2023).
- [A10] Seyed Amin Tabatabaeifard, Jean-François Lalonde, Marc Hébert, André Potvin, and Claude M.H. Demers. “Exploring view access for biophilic arctic architecture through immersive visualization of integrative lighting”. In: *Journal of Building Engineering* 69.15 (2023).
- [A11] Geoffroi Côté, Yueqian Zhang, Christoph Menke, Jean-François Lalonde, and Simon Thibault. “Inferring the solution space of microscope objective lenses using deep learning”. In: *Optics Express* 30.5 (2022).
- [A12] Geoffroi Côté, Jean-François Lalonde, and Simon Thibault. “Deep learning-enabled framework for automatic lens design starting point generation”. In: *Optics Express* 29.3 (2021), pp. 3841–3854.
- [A13] Yannick Hold-Geoffroy, Paulo F. U. Gotardo, and Jean-François Lalonde. “Single day outdoor photometric stereo”. In: *IEEE Transactions on Pattern Analysis and Machine Intelligence* 43.6 (2021), pp. 2062–2074.
- [A14] Mojtaba Parsaee, Claude M. Demers, André Potvin, Jean-François Lalonde, Mehlika Inanici, and Marc Hébert. “Biophilic photobiological adaptive envelopes for sub-arctic buildings: exploring impacts of window sizes and shading panels’ color, reflectance, and configuration”. In: *Solar Energy* 220.6 (2021), pp. 802–827.
- [A15] Mojtaba Parsaee, Claude M. H. Demers, André Potvin, Marc Hébert, and Jean-François Lalonde. “Window view access in architecture: spatial visualization and probability evaluations based on human vision fields and biophilia”. In: *Buildings* 11.12 (2021).
- [A16] Maxime Tremblay, Shirsendu Halder, Raoul de Charette, and Jean-François Lalonde. “Rain rendering for evaluating and improving robustness to bad weather”. In: *International Journal of Computer Vision* 129 (2021), pp. 341–360.
- [A17] Ethan Tseng, Ali Mosleh, Fahim Mannan, Karl St-Arnaud, Avinash Sharma, Yifan Peng, Alexander Braun, Derek Nowrouzezahrai, Jean-François Lalonde, and Felix Heide. “Differentiable compound optics and processing pipeline optimization for end-to-end camera design”. In: *ACM Transactions on Graphics* (2021).
- [A18] Philippe Lalonde, Claude M. Demers, Jean-François Lalonde, André Potvin, and Marc Hébert. “Spatial representations of melanopic light in architecture”. In: *Architectural Science Review* (2020).
- [A19] Mojtaba Parsaee, Claude M. Demers, Marc Hébert, Jean-François Lalonde, and André Potvin. “Biophilic, photobiological and energy-efficient design framework of adaptive building façades for northern canada”. In: *Indoor and Built Environment* (Feb. 2020).
- [A20] Mojtaba Parsaee, Claude M. Demers, Jean-François Lalonde, André Potvin, Mehlika Inanici, and Marc Hébert. “Human-centric lighting performance of shading panels in architecture: a benchmarking study with lab scale physical models under real skies”. In: *Solar Energy* 24 (2020), pp. 254–268.

- [A21] Geoffroi Côté, Jean-François Lalonde, and Simon Thibault. “Extrapolating from lens design databases using deep learning”. In: *Optics Express* 27.20 (2019).
- [A22] Félix Labrie-Larrivée, Denis Laurendeau, and Jean-François Lalonde. “Depth texture synthesis for high resolution reconstruction of large scenes”. In: *Machine Vision and Applications* 30.4 (2019).
- [A23] Mojtaba Parsaee, Claude M.H. Demers, Marc Hébert, Jean-François Lalonde, and André Potvin. “A photobiological approach to biophilic design in extreme climates”. In: *Building and Environment* 154 (May 2019), pp. 211–226.
- [A24] Ethan Tseng, Felix Yu, Yuting Yang, Fahim Mannan, Karl St. Arnaud, Derek Nowrouzezahrai, Jean-François Lalonde, and Felix Heide. “Hyperparameter optimization in black-box image processing using differentiable proxies”. In: *ACM Transactions on Graphics (SIGGRAPH)* 38.4 (2019).
- [A25] Dan A. Calian, Jean-François Lalonde, Paulo F.U. Gotardo, Tomas Simon, Iain Matthews, and Kenny Mitchell. “From faces to outdoor light probes”. In: *Computer Graphics Forum (Eurographics 2018)* 37.2 (2018).
- [A26] Jinsong Zhang, Rodrigo Verschae, Shohei Nobuhara, and Jean-François Lalonde. “Deep photovoltaic nowcasting”. In: *Solar Energy* 176 (2018), pp. 267–276.
- [A27] Marc-André Gardner, Kalyan Sunkavalli, Ersin Yumer, Xiaohui Shen, Emiliano Gambaretto, Christian Gagné, and Jean-François Lalonde. “Learning to predict indoor illumination from a single image”. In: *ACM Transactions on Graphics (SIGGRAPH Asia)* 9.4 (2017).
- [A28] Mathieu Garon and Jean-François Lalonde. “Deep 6-DOF tracking”. In: *IEEE Transactions on Visualization and Computer Graphics* 23.11 (2017).
- [A29] Minghui Tan, Jean-François Lalonde, Lavanya Sharan, Holly Rushmeier, and Carol O’Sullivan. “The perception of lighting inconsistencies in composite outdoor scenes”. In: *ACM Transactions on Applied Perception* 12.4 (Aug. 2015).
- [A30] Jean-François Lalonde, Alexei A Efros, and Srinivasa 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.
- [A31] Jean-François Lalonde, Srinivasa G Narasimhan, and Alexei 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.
- [A32] Ranjith Unnikrishnan, Jean-François Lalonde, Nicolas Vandapel, and Martial Hebert. “Scale selection for geometric fitting in noisy point clouds”. In: *International Journal of Computational Geometry & Applications* 20.5 (Oct. 2010), pp. 543–575.
- [A33] Jean-François Lalonde, Alexei A Efros, and Srinivasa 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.
- [A34] Minh Hoai Nguyen, Jean-François Lalonde, Alexei A Efros, and Fernando de la Torre. “Image-based shaving”. In: *Computer Graphics Forum Journal (Eurographics 2008)* 27.2 (2008), pp. 627–635.
- [A35] Jean-François Lalonde, Derek Hoiem, Alexei A Efros, Carsten Rother, John Winn, and Antonio Criminisi. “Photo clip art”. In: *ACM Transactions on Graphics (SIGGRAPH 2007)* 26.3 (Aug. 2007).
- [A36] Jean-François Lalonde, Nicolas Vandapel, and Martial Hebert. “Data structures for efficient dynamic processing in 3D”. In: *International Journal of Robotics Research* 26.8 (Aug. 2007).
- [A37] Jean-François Lalonde, Nicolas Vandapel, Daniel F Huber, and Martial Hebert. “Natural terrain classification using three-dimensional lidar data for ground robot mobility”. In: *Journal of Field Robotics* 23.10 (Oct. 2006), pp. 839–861.

Refereed Conference Papers

- [C1] Justine Giroux, Mohammad Reza Karimi Dastjerdi, Yannick Hold-Geoffroy, Javier Vazquez-Corral, and Jean-François Lalonde. “Towards a perceptual evaluation framework for lighting estimation”. In: *IEEE/CVF Conference on Computer Vision and Pattern Recognition*. 2024.
- [C2] Akshaya Athwale, Arman Afrasiyabi, Justin Lagüe, Ichrak Shili, Ola Ahmad, and Jean-François Lalonde. “DarSwin: distortion aware radial swin transformer”. In: *IEEE/CVF International Conference on Computer Vision*. 2023.

- [C3] Christophe Bolduc, Justine Giroux, Marc Hébert, Claude Demers, and Jean-François Lalonde. “Beyond the pixel: a photometrically calibrated HDR dataset for luminance and color temperature prediction”. In: *IEEE/CVF International Conference on Computer Vision*. 2023.
- [C4] Geoffroi Côté, Fahim Mannan, Simon Thibault, Jean-François Lalonde, and Felix Heide. “The differentiable lens: compound lens search over glass surfaces and materials for object detection”. In: *IEEE/CVF Conference on Computer Vision and Pattern Recognition*. 2023.
- [C5] Mohammad Reza Karimi Dastjerdi, Yannick Hold-Geoffroy, Jonathan Eisenman, and Jean-François Lalonde. “EverLight: indoor-outdoor editable HDR lighting estimation”. In: *IEEE/CVF International Conference on Computer Vision*. 2023.
- [C6] Dominique Piché-Meunier, Yannick Hold-Geoffroy, Jianming Zhang, and Jean-François Lalonde. “Lens parameter estimation for realistic depth of field modeling”. In: *IEEE/CVF International Conference on Computer Vision*. 2023.
- [C7] Yohan Poirier-Ginter and Jean-François Lalonde. “Robust unsupervised StyleGAN image restoration”. In: *IEEE/CVF Conference on Computer Vision and Pattern Recognition*. 2023.
- [C8] Lucas Valença, Jinsong Zhang, Michaël Gharbi, Yannick Hold-Geoffroy, and Jean-François Lalonde. “Shadow harmonization for realistic compositing”. In: *ACM SIGGRAPH Asia*. 2023.
- [C9] Arman Afrasiyabi, Hugo Larochelle, Jean-François Lalonde, and Christian Gagné. “Matching feature sets for few-shot image classification”. In: *IEEE/CVF Conference on Computer Vision and Pattern Recognition*. 2022.
- [C10] Mohammad Reza Karimi Dastjerdi, Yannick Hold-Geoffroy, Jonathan Eisenman, Siavash Khodadadeh, and Jean-François Lalonde. “Guided co-modulated GAN for 360° field of view extrapolation”. In: *International Conference on 3D Vision*. 2022.
- [C11] Pulkit Gera, Mohammad Reza Karimi Dastjerdi, Charles Renaud, P. J. Narayanan, and Jean-François Lalonde. “Casual indoor HDR radiance capture from omnidirectional images”. In: *British Machine Vision Conference*. 2022.
- [C12] Bhavya Goyal, Jean-François Lalonde, Yin Li, and Mohit Gupta. “Robust scene inference under noise-blur dual corruptions”. In: *International Conference on Computational Photography*. 2022.
- [C13] Fabio Pizzati, Jean-François Lalonde, and Raoul de Charette. “ManiFest: manifold deformation for few-shot image translation”. In: *European Conference on Computer Vision*. 2022.
- [C14] Yohan Poirier-Ginter, Alexandre Lessard, Ryan Smith, and Jean-François Lalonde. “Overparameterization improves StyleGAN inversion”. In: *CVPR AI for Content Creation Workshop*. 2022.
- [C15] Henrique Weber, Mathieu Garon, and Jean-François Lalonde. “Editable indoor lighting estimation”. In: *European Conference on Computer Vision*. 2022.
- [C16] Arman Afrasiyabi, Jean-François Lalonde, and Christian Gagné. “Persistent mixture model networks for few-shot image classification”. In: *IEEE/CVF International Conference on Computer Vision*. 2021.
- [C17] Julie Buquet, Jinsong Zhang, Patrice Roulet, Simon Thibault, and Jean-François Lalonde. “Evaluating the impact of wide-angle lens distortion on learning-based depth estimation”. In: *CVPR Workshop on Omnidirectional Computer Vision*. 2021.
- [C18] Jean-Philippe Mercier, Mathieu Garon, Philippe Giguère, and Jean-François Lalonde. “Deep template-based object instance detection”. In: *IEEE Winter Conference on Applications of Computer Vision*. 2021.
- [C19] Arman Afrasiyabi, Jean-François Lalonde, and Christian Gagné. “Associative alignment for few-shot image classification”. In: *European Conference on Computer Vision*. 2020.
- [C20] Louis-Philippe Asselin, Denis Laurendeau, and Jean-François Lalonde. “Deep SVBRDF estimation on real materials”. In: *International Conference on 3D Vision*. 2020.
- [C21] Sébastien DeBlois, Mathieu Garon, Christian Gagné, and Jean-François Lalonde. “Input dropout for spatially aligned modalities”. In: *IEEE International Conference on Image Processing*. 2020.
- [C22] Etienne Dubeau, Mathieu Garon, Benoit Debaque, Raoul de Charette, and Jean-François Lalonde. “RGB-D-E: event camera calibration for fast 6-DOF object tracking”. In: *International Symposium on Mixed and Augmented Reality*. 2020.

- [C23] Thomas Nestmeyer, Iain Matthews, Jean-François Lalonde, and Andreas Lehrmann. “Learning physics-guided face relighting under directional light”. In: *IEEE/CVF Conference on Computer Vision and Pattern Recognition*. 2020.
- [C24] Geoffroi Côté, Jean-François Lalonde, and Simon Thibault. “Introducing a dynamic deep neural network to infer lens design starting points”. In: *Current Developments in Lens Design and Optical Engineering XX*. 2019.
- [C25] Marc-André Gardner, Yannick Hold-Geoffroy, Kalyan Sunkavalli, Christian Gagné, and Jean-François Lalonde. “Deep parametric indoor lighting estimation”. In: *IEEE/CVF International Conference on Computer Vision*. 2019.
- [C26] Mathieu Garon, Kalyan Sunkavalli, Nathan Carr, Sunil Hadap, and Jean-François Lalonde. “Fast spatially-varying indoor lighting estimation”. In: *IEEE/CVF Conference on Computer Vision and Pattern Recognition*. 2019.
- [C27] Shirsendu Halder, Jean-François Lalonde, and Raoul de Charette. “Physics-based rain rendering for studying and improving robustness to rain”. In: *IEEE/CVF International Conference on Computer Vision*. 2019.
- [C28] Yannick Hold-Geoffroy, Akshaya Athawale, and Jean-François Lalonde. “Deep sky modeling for single image outdoor lighting estimation”. In: *IEEE/CVF Conference on Computer Vision and Pattern Recognition*. 2019.
- [C29] Jinsong Zhang, Kalyan Sunkavalli, Yannick Hold-Geoffroy, Sunil Hadap, Jonathan Eisenman, and Jean-François Lalonde. “All-weather deep outdoor lighting estimation”. In: *IEEE/CVF Conference on Computer Vision and Pattern Recognition*. 2019.
- [C30] Sławomir Bąk, Peter Carr, and Jean-François Lalonde. “Domain adaptation through synthesis for unsupervised person re-identification”. In: *European Conference on Computer Vision*. 2018.
- [C31] Mathieu Garon, Denis Laurendeau, and Jean-François Lalonde. “A framework for evaluating 6-DOF object trackers”. In: *European Conference on Computer Vision*. 2018.
- [C32] Yannick Hold-Geoffroy, Kalyan Sunkavalli, J. Eisenmann, Matthew Fisher, Emiliano Gambaretto, Sunil Hadap, and Jean-François Lalonde. “A perceptual measure for deep single image camera calibration”. In: *IEEE/CVF Conference on Computer Vision and Pattern Recognition*. 2018.
- [C33] Jean-François Lalonde. “Deep learning for augmented reality”. In: *Workshop on Information Optics*. 2018.
- [C34] Henrique Weber, Donald Prévost, and Jean-François Lalonde. “Learning to estimate indoor lighting from 3D objects”. In: *International Conference on 3D Vision*. 2018.
- [C35] Mathieu Garon and Jean-François Lalonde. “Deep 6-DOF tracking”. In: *International Symposium on Mixed and Augmented Reality*. 2017.
- [C36] Yannick Hold-Geoffroy, Kalyan Sunkavalli, Sunil Hadap, Emiliano Gambaretto, and Jean-François Lalonde. “Deep outdoor illumination estimation”. In: *IEEE/CVF Conference on Computer Vision and Pattern Recognition*. 2017.
- [C37] Jinsong Zhang and Jean-François Lalonde. “Learning high dynamic range from outdoor panoramas”. In: *IEEE/CVF International Conference on Computer Vision*. 2017.
- [C38] Maryam Ziaeeefard, Jean-François Lalonde, and Robert Bergevin. “Deep uncertainty interpretation in dyadic human activity prediction”. In: *IEEE International Conference on Machine Learning and Applications*. 2017.
- [C39] Mathieu Garon, Pierre-Olivier Boulet, Jean-Philippe Doiron, Luc Beaulieu, and Jean-François Lalonde. “Real-time high resolution 3D data on the HoloLens”. In: *International Symposium on Mixed and Augmented Reality*. 2016.
- [C40] Félix Labrie-Larrivée, Denis Laurendeau, and Jean-François Lalonde. “Depth texture synthesis for realistic architectural modeling”. In: *Computer and Robot Vision Conference (CRV)*. 2016.
- [C41] Miguel Granados, Tunç Ozan Aydın, Jose Rafael Tena, Jean-François Lalonde, and Christian Theobalt. “Contrast use metrics for tone mapping images”. In: *IEEE International Conference on Computational Photography*. 2015.
- [C42] Miguel Granados, Tunç Ozan Aydın, Jose Rafael Tena, Jean-François Lalonde, and Christian Theobalt. “HDR image noise calibration for denoising tone mapped images”. In: *European Conference on Visual Media and Production (CVMP)*. 2015.

- [C43] Yannick Hold-Geoffroy, Jinsong Zhang, Paulo F U Gotardo, and Jean-François Lalonde. “What is a good day for outdoor photometric stereo?” In: *IEEE International Conference on Computational Photography*. 2015.
- [C44] Yannick Hold-Geoffroy, Jinsong Zhang, Paulo F. U. Gotardo, and Jean-François Lalonde. “ x -hour outdoor photometric stereo”. In: *International Conference on 3D Vision*. 2015.
- [C45] Sébastien Michaud, Jean-François Lalonde, and Philippe Giguère. “Towards characterizing the behavior of lidars in snowy conditions”. In: *IROS Workshop on Planning, Perception and Navigation for Intelligent Vehicles*. 2015.
- [C46] Minghui Tan, Jean-François Lalonde, Lavanya Sharan, Holly Rushmeier, and Carol O’Sullivan. “The perception of lighting inconsistencies in composite outdoor scenes”. In: *ACM Symposium on Applied Perception*. 2015.
- [C47] Jean-François Lalonde and Iain Matthews. “Lighting estimation in outdoor image collections”. In: *International Conference on 3D Vision*. 2014.
- [C48] Jean-François Lalonde, Alexei A Efros, and Srinivasa G Narasimhan. “Detecting ground shadows in outdoor consumer photographs”. In: *European Conference on Computer Vision*. 2010.
- [C49] Jean-François Lalonde, Alexei A Efros, and Srinivasa G Narasimhan. “Estimating natural illumination from a single outdoor image”. In: *IEEE/CVF International Conference on Computer Vision*. 2009.
- [C50] Jean-François Lalonde, Srinivasa G Narasimhan, and Alexei A Efros. “What does the sky tell us about the camera?” In: *European Conference on Computer Vision (ECCV)*. 2008.
- [C51] Nicholas Heckman, Jean-François Lalonde, Nicolas Vandapel, and Martial Hebert. “Potential negative obstacle detection by occlusion labeling”. In: *IEEE/RSJ International Conference on Intelligent Robots and Systems*. 2007.
- [C52] Jean-François Lalonde and Alexei A Efros. “Using color compatibility for assessing image realism”. In: *IEEE/CVF International Conference on Computer Vision*. 2007.
- [C53] Jean-François Lalonde, Christopher Bartley, and Illah Nourbakhsh. “Mobile robot programming in education”. In: *IEEE International Conference on Robotics and Automation (ICRA)*. May 2006.
- [C54] Ranjith Unnikrishnan, Jean-François Lalonde, Nicolas Vandapel, and Martial Hebert. “Scale selection for the analysis of point-sampled curves”. In: *International Symposium on 3D Data Processing, Visualization, and Transmission (3DPVT)*. 2006.
- [C55] Jean-François Lalonde, Ranjith Unnikrishnan, Nicolas Vandapel, and Martial Hebert. “Scale selection for classification of point-sampled 3D surfaces”. In: *International Conference on 3D Digital Imaging and Modeling (3DIM)*. 2005.
- [C56] Jean-François Lalonde, Nicolas Vandapel, and Martial Hebert. “Data structure for efficient processing in 3D”. In: *Robotics: Science and Systems I*. MIT Press, June 2005.
- [C57] Guy Godin, Jean-François Lalonde, and Louis Borgeat. “Dual-resolution stereoscopic display with scene-adaptive fovea boundaries”. In: *International Immersive Projection Technology Workshop*. 2004.
- [C58] Guy Godin, Jean-François Lalonde, and Louis Borgeat. “Projector-based dual-resolution stereoscopic display”. In: *IEEE Virtual Reality*. 2004.
- [C59] Jerome Vignola, Jean-François Lalonde, and Robert Bergevin. “Progressive human skeleton fitting”. In: *Conference on Vision Interface*. 2003.

Refereed Symposia Posters

- [S1] Yannick Hold-Geoffroy, Kalyan Sunkavalli, J. Eisenmann, Matthew Fisher, Emiliano Gambaretto, Sunil Hadap, and Jean-François Lalonde. “A perceptual measure for deep single image camera calibration”. In: *IEEE International Conference on Computational Photography*. 2018.
- [S2] Yannick Hold-Geoffroy, Jinsong Zhang, Paulo F. U. Gotardo, and Jean-François Lalonde. “ x -hour outdoor photometric stereo”. In: *International Conference on Computational Photography*. 2016.
- [S3] Jean-François Lalonde, Alexei A Efros, and Srinivasa G Narasimhan. “Estimating the natural illumination conditions from a single outdoor image”. In: *International Conference on Computational Photography*. 2011.

Patents

- [P1] Marc-André Gardner, Yannick Hold-Geoffroy, Kalyan Sunkavalli, Christian Gagné, and Jean-François Lalonde. “Dynamically estimating light-source-specific parameters for digital images using a neural network”. Patent P8931-US / 20030.273 (US). Dec. 2022.
- [P2] Jinsong Zhang, Kalyan Sunkavalli, Yannick Hold-Geoffroy, Sunil Hadap, Jonathan Eisenmann, and Jean-François Lalonde. “Learning from estimated high-dynamic range all weather lighting parameters”. Patent 10,957,026 (US). Mar. 2021.
- [P3] Mathieu Garon, Kalyan Sunkavalli, Sunil Hadap, Nathan Carr, and Jean-François Lalonde. “Dynamically estimating lighting parameters for positions within augmented-reality scenes based on global and local features”. Patent 10,665,011 (US). May 2020.
- [P4] Iain Matthews and Jean-François Lalonde. “Systems and methods for estimating sky light probes for outdoor images”. Patent 9,860,453 B2 (US). Jan. 2018.
- [P5] Jean-François Lalonde and Iain Matthews. “Predicting a light probe from an outdoor image”. Patent 9,639,773 B2 (US). May 2017.
- [P6] Miguel Granados, Rafael Tena, Tunç O. Aydin, Jean-François Lalonde, Christian Theobalt, and Iain Matthews. “High dynamic range and tone mapping imaging techniques”. Patent 9,275,445 B2 (US). Mar. 2016.
- [P7] Andrew N. Stein and Jean-François Lalonde. “Oriented, spatio-spectral illumination constraints for use in an image process”. Patent 8,934,735 B2 (US). Jan. 2015.
- [P8] Jean-François Lalonde. “Spatially-varying log-chromaticity normals for use in an image process”. Patent 8,842,910 B2 (US). Sept. 2014.
- [P9] Jean-François Lalonde. “Weighted entropy minimization for optimizing a log-chromaticity normal for use in an image process”. Patent 8,811,732 B2 (US). Aug. 2014.
- [P10] Jean-François Lalonde, Patrick Buehler, Bruce Maxwell, Casey Smith, Andrew Stein, and Richard Friedhoff. “Log-chromaticity clustering pipeline for use in an image process”. Patent 8,849,018 B2 (US). Sept. 2014.

Patent Applications

- [PA1] Mathieu Garon, Henrike Weber, and Jean-François Lalonde. “Systems and methods for rendering virtual objects using editable light-source parameter estimation”. Patent Application 18/196,887 (PCT).
- [PA2] Marc-André Gardner, Jean-François Lalonde, and Christian Gagné. “Method and system for dynamically estimating light-source parameters from multiple images”. Patent Application PCT/CA2021/050805 (PCT). Dec. 2021.

HONORS AND RECOGNITIONS

- 2022 Best (Remote) Poster Prize, AI4CC Workshop at CVPR 2022
- 2014–21 Outstanding Reviewer Award: CVPR 2014, 2015, 2017, 2018, 2019, NeurIPS 2019, ICCV 2021
- 2018 Best Paper Award, WIO 2018
- 2017 Excellence in teaching award, category “digital educational resource”, Université Laval
- 2017 Best Professor Award, IEEE student branch
- 2015–20 Star Professor Award, School of Science and Engineering
- 2015 Best Paper (Runner Up) Award, 3DV 2015
- 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)

FUNDING

- 2023–2027 **NSERC Alliance Grant ALLRP 586543-23**, “Physics-driven image compositing”, with Depix, PI
\$240,000 / 4 years

- 2023–2025 **NSERC Alliance Grant ALLRP 584659-23**, “High-mix low-volume 3D object detection and tracking”, with NeurobotIA, SBI, PI (Co-applicants: Gaudreault J., Giguère P.)
\$120,000 / 2 years
- 2022–2023 **Research contract**, “HDR lighting estimation for AR headsets”, with Meta, PI
\$125,000 / 1 year
- 2021–2025 **NSERC Alliance Grant ALLRP 567654-21**, “Learning to Reason from Uncalibrated Wide Angle Images”, with Thalès, PI
\$160,000 / 4 years
- 2021–2024 **Canada First Research Excellence Fund (Sentinel North)**, “Design Biophilique en Arctique: Co-création Communautaire Immersive pour Concilier Bien-être et Performance Énergétique dans l’Architecture d’Ikaluktutiak”, co-PI (Co-PIs: Demers C., Hébert M., Co-applicants: Caja Rubio D., Gosselin L., Potvin A.)
\$744,074 / 4 years
- 2020–2024 **NSERC Alliance Grant ALLRP 557208-20**, “Learning to Light and Relight Images”, with Adobe, PI
\$220,000 / 4 years
- 2020–2026 **NSERC Discovery Grant RGPIN-2020-04799**, “Understanding the World behind the Image”, PI
\$288,000 / 6 years
- 2020–2021 **COVID-19 Emergency Research Fund, The Ottawa Hospital Foundation**, “Reducing T-zone Touching to Reduce COVID-19 Transmission and Infection”, Co-Investigator (PIs: Presseau J., Grimshaw J.M. Co-Is: Brehaut J., Durand A., Francis J.J., Manuel D., Michie S., Morris A., Suh K.N., Shawe-Taylor J., West R., Wilson B.J., Witteman H.)
\$25,000
- 2019–2021 **NSERC Collaborative Research and Development Grant CRDPJ 537961-18**, “Deep Style Transfer for 3D Meshes”, with Gearbox, PI
\$104,000 / 2 years
- 2019–2020 **NSERC ENGAGE EGP2 544431-19**, “Wide-angle Vision and Sensing using Artificial Intelligence, Machine Learning and Neural Networks—phase 2”, with Immervision, PI
\$24,522 / 6 months
- 2018–2019 **NSERC ENGAGE EGP 531221-18**, “Wide-angle Vision and Sensing using Artificial Intelligence, Machine Learning and Neural Networks”, with Immervision, PI
\$24,973 / 6 months
- 2018–2020 **FRQ-NT Samuel-de-Champlain**, “Vision par Ordinateur en Conditions Difficiles”, PI, Co-PI: de Charrette R., INRIA
\$30,000 / 2 years
- 2018–2020 **NSERC Collaborative Research and Development Grant CRDPJ 524235-18**, “Inferring 3D Information from a Monocular Camera”, with Immervision, PI
\$78,000 / 2 years
- 2018–2021 **FRQ-NT Team Grant 2019-PR-254912**, “Visual Place Recognition for Robots Operating in Changing Environments”, Co-PI (PI: Giguère P., Co-PIs: Chaib-draa B., Meger D.)
\$162,000 / 3 years
- 2017–2021 **Canada First Research Excellence Fund (Sentinel North)**, “Optimisation of Biophilia in Extreme Climates through Architecture”, co-PI (PIs: Demers C., Hébert M.)
\$625,640 / 4 years
- 2017–2018 **NSERC ENGAGE Plus EGP2 522789-18**, “Surface Reflectance Acquisition for Finished Materials—phase 2”, with Arcane Technologies, PI
\$21,740 / 6 months

- 2017–2018 **NSERC ENGAGE EGP 505674-16**, “Surface Reflectance Acquisition for Finished Materials”, with Arcane Technologies, PI
\$24,995 / 6 months
- 2017 **Research contract**, “High Resolution, High Dynamic Range Panorama Capture”, Adobe Systems
\$33,500 / 6 months
- 2016–2020 **Unrestricted gift for research activities**, Adobe Systems
\$130,000, unlimited duration
- 2016–2019 **Research grant**, “Automated method for replacing real-world objects present in a monocular video with a virtual object”, Institut National d’Optique
\$60,000 / 4 years
- 2016 **Research grant**, “Change detection with autonomous mobile robots”, Umanx
\$9,000 / 4 months
- 2016 **Educational innovation grant**, “Educational Tool for Teaching the Internal Structure of Computers”, Université Laval
\$4,601.25 / 6 months
- 2016 **MITACS Accelerate IT06791**, “Improving Interactivity in Augmented Reality for Video Games Applications”, with Frima Studio
\$15,000 / 4 months
- 2016 **NSERC ENGAGE EGP 491144-15**, “Precise and Robust Extraction of Physical Measurements by Processing Images Acquired by a Mobile Platform”, Co-PI (PI: Daniel S.), with Bulldozer inc
\$24,334 / 6 months
- 2015–2016 **NSERC ENGAGE EGP 485663-15**, “Monocular Face Reconstruction for Virtual Try-on Applications”, with Mentum, PI
\$24,994 / 6 months
- 2015–2017 **FRQ-NT New Researcher Grant 2016NC189939**, “Outdoor Photometric Stereo Under Unknown Illumination”, PI
\$40,000 / 2 years, with an additional \$25,829 for equipment
- 2014–2020 **NSERC Discovery Grant RGPIN-2014-05314**, “Bringing Images to Light”, PI
\$222,000 / 6 years

TALKS

Invited talks

- 06/2024 “Adapting to wide-angle lenses with distortion-aware transformers”, Keynote speaker, OmniCV workshop at CVPR 2024, Seattle, USA
- 04/2024 “Generative models for lighting estimation”, Invited speaker, ACM SIGGRAPH Montreal Chapter, Montreal, Canada
- 06/2023 “Towards AI-driven lens design”, Keynote speaker, International Optical Design Conference, Québec, Canada
- 05/2023 “Le métavers : un mode parallèle à découvrir”, Colloque International en Éducation, Montréal, Canada
- 04/2022 “How can we shed light on human well-being by combining architecture, medicine, and AI?”, Zoom sur l’IA multidisciplinaire, IVADO, Remote
- 10/2021 “Learning to Estimate Lighting”, Keynote speaker, 29th Color and Imaging Conference, Remote
- 10/2021 “Differentiable Optics for End-to-end Camera Design”, Real-World Computer Vision from Inputs with Limited Quality workshop, IEEE/CVF International Conference on Computer Vision, Remote
- 09/2021 “Differentiable Compound Optics and Black-box Image Processing for End-to-end Camera Design”, Distinguished AI Lecture series at Imperial College London, Remote

- 06/2021 “A Perceptual Measure for Wide Angle Lens and Camera Calibration”, OmniCV: Omnidirectional computer vision in research and industry workshop, IEEE/CVF Conference on Computer Vision and Pattern Recognition, Remote
- 04/2021 “Inverting the image formation process to simplify VFX production”, VFX | AI Symposium, Bureau de la télévision et du cinéma du Québec, Remote
- 06/2020 “Leveraging Omnidirectional Images to Learn how to Estimate Lighting”, OmniCV: Omnidirectional computer vision in research and industry workshop, IEEE/CVF Conference on Computer Vision and Pattern Recognition, Remote
- 06/2020 “Going Beyond the Clear Weather Assumption”, Vision for all seasons: adverse weather and lighting conditions workshop, IEEE/CVF Conference on Computer Vision and Pattern Recognition, Remote
- 11/2019 “Combining Physics and Learning for Outdoor Lighting Estimation”, Physics-based meets deep learning workshop, IEEE International Conference on Computer Vision, Seoul, South Korea
- 05/2019 “Learning to Understand Lighting”, Computer and Robot Vision Conference, Kingston, Ontario
- 04/2019 “Deep Learning for Understanding the Image Formation Process”, ARTIFACTZ Workshop, Nice, France
- 07/2018 “Deep Learning and Augmented Reality”, Keynote speaker, Workshop on Information Optics, Québec
- 11/2017 “Learning to Predict Illumination from a Single Image”, NSERC CREATE Data Analytics & Visualization Bootcamp 2017, York University, Toronto
- 10/2017 “Deep Learning for Computer Graphics: Learning to Estimate Lighting from Photographs”, Re-Work Deep Learning Summit Montreal, Montreal
- 06/2015 “Richer Models for Outdoor Lighting”, Computer and Robot Vision Conference, Halifax
- 11/2012 “Understanding Illumination in Natural Images”, SCS Distinguished Dissertation Award Lecture, Pittsburgh, USA

Tutorials

- 09/2016 “Computational Photography Tutorial”, International Conference on Image Processing, Phoenix, USA
- 09/2015 “Computational Photography Tutorial”, International Conference on Image Processing, Quebec City

Research seminar talks

- 04/2023 “Towards Editable Lighting Estimation”, IEEE Winnipeg Young Professionals remote seminar, Winnipeg, Canada
- 10/2022 “Towards Editable Lighting Estimation”, University of Illinois Urbana-Champaign remote seminar, Chicago, USA
- 09/2022 “Towards Editable Lighting Estimation”, VASC Seminar, Carnegie Mellon University, Pittsburgh, USA
- 09/2022 “Towards Editable Lighting Estimation”, Meta Reality Lab Research, Pittsburgh, USA
- 03/2021 “Understanding the World behind the Image”, REPARTI Webinar, Quebec
- 05/2019 “Deep Learning for Understanding the Image Formation Process”, NRC, Ottawa
- 01/2019 “Deep learning for depth estimation”, Leddartech, Québec
- 12/2018 “Learning to Estimate Lighting from a Single Image”, KAIST, Daejeon, Korea
- 10/2018 “Learning to Estimate Lighting from a Single Image”, INRIA, Paris, France
- 05/2018 “AR and AI”, INRS Eau-Terre-Environnement, Québec
- 05/2018 “From Faces to Outdoor Light Probes”, REPARTI Seminar, U. Laval

- 12/2017 “Deep Learning and Panoramas”, Immervision, Montreal
- 11/2017 “Learning to Estimate Lighting From Photographs”, Disney Research, Zürich, Switzerland
- 06/2017 “Object Detection and Deep Learning”, Umanx, Québec
- 05/2017 “Deep Learning and 3D”, Creaform Tech Lunches, Québec
- 05/2017 “Learning to Predict Illumination from a Single Image”, Montreal Institute for Learning Algorithms, Montreal
- 05/2017 “Opportunistic Lighting and Augmented Reality”, Thalès, Québec
- 11/2016 “Special Effects in Photographs”, Kyoto University, Kyoto, Japan
- 11/2016 “Modeling Outdoor Illumination”, Kyoto University, Kyoto, Japan
- 11/2015 “Data-driven Modeling of Outdoor Illumination”, University College, London, UK
- 10/2015 “Data-driven Modeling of Outdoor Illumination”, McGill University, Montreal
- 10/2015 “Computational Photography Overview”, Algolux, Montreal
- 03/2015 “Richer Models for Outdoor Lighting Synthesis and Understanding”, Uber Advanced Technology Center, Pittsburgh, USA
- 05/2014 “Special Effects in your Photos”, REPARTI workshop, Québec
- 03/2014 “Daylight and Material Estimation from Photo Collections”, REPARTI Seminar, U. Laval
- 11/2013 “Point-and-shoot Sky Probes”, REPARTI Seminar, U. Laval
- 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
- 01/2011 “Understanding and Recreating Visual Appearance Under Natural Illumination”, Carnegie Mellon University
- 10/2010 “Estimating Illumination Conditions from a Single Outdoor Image”, U. Laval
- 08/2010 “Understanding and Recreating Visual Appearance under Natural Illumination”, Tandent Vision Science, Pittsburgh, USA
- 11/2008 “What Does the Sky Tell Us About the Camera?”, VASC Seminar, Carnegie Mellon University
- 06/2008 “Capturing the Illumination of a Scene: 2 Data-driven Approaches”, U. Laval
- [Scientific conference talks](#)
- 11/2015 “HDR Image Noise Estimation for Denoising Tone Mapped Images”, Conference on Visual Media and Production, London, UK
- 04/2015 “Contrast Use Metrics for Tone Mapping Images”, International Conference on Computational Photography, Houston, TX, USA
- 05/2010 “Webcam Clip Art”, FMX, Stuttgart, Germany
- 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
- [General public presentations](#)
- 10/2023 “Comprendre et générer les images grâce à l’apprentissage profond”, Formation Continue, Faculté des Sciences et de génie, Université Laval, Canada

- 09/2023 “Le métavers : un monde parallèle à découvrir”, Bibliothèque du Cégep de Thetford Mines, Thetford Mines, Canada
- 05/2023 Panelist, Symposium “R&D et R&C : les formes de collaborations intersectorielles dans les industries créatives”, ACFAS, Montréal, Canada
- 10/2022 “Le métavers : un monde parallèle à découvrir”, Semaine ULaval pour toujours, Université Laval
- 12/2021 “Deep learning and augmented reality”, IEEE student branch, Université Laval
- 05/2021 Panelist, Symposium “Former pour agir en contexte numérique : CLE de la relance post-COVID”
- 03/2021 “Intelligence artificielle : les technologies du faux”, Série “Décoder le monde”, coorganisée par les Fonds de recherche du Québec et le Musée de la civilisation, Québec
- 10/2019 “Augmenter la réalité grâce à l’intelligence artificielle”, Rendez-vous numériques, ITIS, Université Laval, Québec
- 06/2019 “Comment Donner une Bonne Présentation”, Séminaire, Université Laval, Québec
- 04/2018 “Intelligence Artificielle et Réalité Augmentée”, Rendez-vous IA Québec, Québec
- 04/2018 “Le Futur de la Réalité Augmentée: Suivi d’Objets et Estimation d’Éclairage Automatiques”, Réalité Augmentée Québec (RAQ), Québec
- 04/2018 “Les Promesses de l’Apprentissage Profond en Réalité Mixte et Augmentée”, Web à Québec (WAQ), Québec
- 04/2018 “Du Rêve à la Réalité... Augmentée!”, Tempête des Sciences, Cégep Garneau, Québec
- 11/2017 “Des effets spéciaux dans vos photos”, IEEE-Ordinateur/Section IEEE Québec, Québec
- 11/2017 “L’intelligence artificielle”, Semaine des réseaux sociaux, Québec
- 10/2017 “Enseigner aux ordinateurs à comprendre l’éclairage dans une photo”, Forum de l’Alliance culture numérique, Musée National des Beaux-Arts du Québec, Québec
- 08/2017 “Programme d’appui à l’innovation pédagogique”, Faculté des Sciences et de Génie, Université Laval
- 04/2016 “Éclairage d’objets virtuels 3D : approches et perspectives”, Journées Aux Frontières du Numérique, ITIS, Québec
- 11/2015 “Repousser les Limites de la Création 3D: Des Effets Spéciaux dans vos Photos”, École de Design, Québec
- 10/2015 “Repousser les Limites de la Création 3D: Lumières, Météo, et Objets Virtuels”, Radio interview, CKRL radio station, Québec
- 10/2015 “Repousser les Limites de la Création 3D: Lumières, Météo, et Objets Virtuels”, ITIS, Québec
- 08/2014 “An Account of Life as a Young Faculty Member”, Université Laval

TEACHING

Université Laval

- 2023–... MAT-2930 Algèbre linéaire appliquée (Applied linear algebra)
- 2014–... GIF-4105/7105 Photographie algorithmique (Computational photography)
- 2015–2023 GIF-1001 Ordinateurs: structure et applications (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)

Teaching assistantships

- 2007 Learning-based methods in vision, Carnegie Mellon University

SERVICE

- 2024 Area Chair, ECCV 2024
- 2023–24 Area Chair, CVPR 2024
- 2023–... Associate Editor, International Journal on Computer Vision, Springer
 - 2023 Special topics chair, Color and Imaging Conference (CIC) 2023
 - 2021 Technical Advisor, “Vast Body” exhibition, Musée de la Civilisation, Québec
 - 2021 Co-organizer, Interactive Labeling and Data Augmentation for Vision Workshop, ICCV 2021
 - 2021 Mentor, Doctoral Consortium, Eurographics 2021
- 2020–23 NSERC Discovery Grant Committee Member, group 1507
 - 2021 Area Chair, 3DV 2021
 - 2021 Doctoral Consortium Chair, CVPR 2021
- 2020–... Associate Editor, The Visual Computer, Springer
- 2020–21 Area Chair, CVPR 2021
 - 2019 Local and Finance Chair, 3DV 2019
 - 2019 Area Chair, ICCV 2019
- 2018–19 Technical Committee Member, ACM SIGGRAPH 2018 and 2019
 - 2018 Technical Advisor, Vocabulaire français de l’intelligence artificielle, Office Québécois de la Langue Française
- 2018–2019 Publication Chair, IEEE International Conf. on Computational Photography 2018–2019
- 2017–2019 Committee member (05B), M.S. scholarship program, FRQ-NT
 - 2008–... Journal reviewer: IEEE TPAMI (2011–...), IJCV (2010–...), ACM TOG (2008–...), IEEE TIP (2012–2014), JVBR (2009–2010), CGF (2008–...), CVIU (2012–14)
 - 2010–... Program committee reviewer: CVPR (2011–...), ECCV (2010–...), ICCV (2011–...), ICCP (2014–2017)
 - 2008–... External reviewer: RSS (2011), CVPR (2008–2010), ICPR (2010), ICCP (2008), ICRA (2007–2012), ICIP (2012–2014)
 - 2018 Local Arrangement Chair, Canadian Conf. on Electrical and Computer Eng. 2018
 - 2017 Committee president (NC04), “Établissement de nouveaux chercheurs”, FRQ-NT
- 2016–2018 Area Chair: International Conference on 3D Vision (2016–2017), Pacific Conference on Computer Graphics and Applications (2017)
- 2015–2016 Ambassador to the city of Quebec, project `1000raisons.quebec`. Program launched by Quebec’s Work Minister, Mr. Sam Hamad, with the goal of attracting international talent to Quebec City.
 - 2015 Program committee member, Technical Briefs and Posters, SIGGRAPH Asia 2015
 - 2012 Panelist, Quality of Life Technology Industry Panel, Carnegie Mellon University
- 2009–2010 Graduate admissions committee, Robotics Institute, Carnegie Mellon University

MEDIA COVERAGE

- 18/12/2023 “Utiliser les caméras pour recréer et améliorer notre monde visuel”, Université Laval
- 18/12/2023 “Parfaire les images virtuelles”, Série “Université Laval au coeur de nos vies”, ULaval Nouvelles
- 18/06/2023 “Une conférence sur la vision par ordinateur rassemble 10 000 chercheurs à Vancouver”, Radio-Canada
- 20/10/2022 “Adobe Can Use AI to Extend Photos Well Beyond Their Original Boundaries”, PetaPixel

- 19/10/2022 “Adobe’s new AI can turn a 2D photo into a 3D scene”, Popular Science
- 19/10/2022 “Project Beyond the Seen”, Adobe Max Sneaks 2022
- 18/08/2021 “Des Robots Humanoïdes : Entrevue avec Jean-François Lalonde, professeur”, Radio-Canada première chaîne
- 11/16/2020 “Meet the Local Scientist Using 3D Computer Vision to Attract Visitors to Québec City”, Skift
- 10/06/2020 “Tapping into Local Innovation to Drive Business Events and Resilient Communities”, Destination Canada
- 05/04/2020 “A Shiny Snack Bag’s Reflections Can Reconstruct the Room around It”, Scientific American
- 03/05/2020 “Clearing Up the Picture”, Communications of the ACM
- 04/05/2018 “Intelligence artificielle: un nouveau vocabulaire de 85 mots en français”, Le Soleil
- 11/09/2017 “Ces passionnés de l’enseignement”, Fil des Événements
- 10/31/2017 “The revolution will be unsupervised and other takeaways from the RE•WORK Deep Learning Summit”, CBC Digital Labs
- 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”, 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)

SUPERVISION

Current Ph.D. Students

- 2023–... **Siddhant Katyan**, *Ph.D. admission scholarship, IID*, in collaboration with Bentley
- 2023–... **Zitian Zhang**, in collaboration with Depix
- 2023–... **Yohan Poirier-Ginter**, co-advisor: George Drettakis, INRIA Sophia-Antipolis (co-tutelle)
- 2022–... **Justine Giroux**, in collaboration with Adobe
- 2021–... **Christophe Bolduc**, co-advisors: Claude Demers, Marc Hébert
- 2021–... **Akshaya Athwale**, in collaboration with Thalès, co-advisor: Ola Ahmad (Thalès)
- 2021–... **Fatemeh Nokabadi**, advisor: Christian Gagné
- 2019–... **Mohammad Reza Karimi Dastjerdi**, in collaboration with Adobe

Current M.S. Students

- 2024–... **Émile Bergeron**, *NSERC/FRQ-NT MS Scholarship*, in collaboration with the Musée National des Beaux-Arts du Québec
- 2023–... **Charles Renaud**, in collaboration with NeurobotIA
- 2023–... **Charles Beaulieu**, in collaboration with NeurobotIA
- 2023–... **Frédéric Fortier-Chouinard**, *FRQ-NT MS Scholarship*, in collaboration with Depix
- 2023–... **Ichrak Shili**, *Bourse nationale d'études en Mastère au Canada (Tunisia)*, in collaboration with Thalès, co-advisor: Ola Ahmad (Thalès)
- 2022–... **Rishikesh Madan**, in collaboration with Intact
- 2022–... **Jean-Michel Pageau**, in collaboration with CDRIN
- 2021–... **Ian Maquignaz**, in collaboration with Adobe
- [Previous Post-Doctoral Researchers](#)
- 2017–2020 **Filippo Ferrario**, *Sentinel North Post-doc scholarship*, co-supervised with Philippe Archambault (biology), Philippe Giguère (CS), Sylvie Daniel (geomatics), and Patrick Lajeunesse (forestry)
Project: “Flexible Imaging Device: packaging an optic-based citizen science solution for mapping habitats in coastal areas”
- 2016–2018 **Fahim Mannan**, advisor: Derek Nowrouzezahrai (McGill), in collaboration with Algolux
Project: “Learning to improve camera ISPs”
- [Graduated Ph.D. Students](#)
- 2020–2024 **Julie Buquet**, advisor: Simon Thibault (physics)
Thesis: “Intégration et applicabilité des méthodes d'apprentissage supervisé pour la conception de systèmes optiques grand-angle”
now at Immervision
- 2017–2023 **Henrique Weber**, *in collaboration with INO, Depix, Adobe*
Thesis: “3D Reasoning for Indoor Lighting Estimation”
now at Depix
- 2019–2022 **Geoffroi Côté**, *Alexander Graham Bell Canada Graduate Scholarship, Sentinelle North Ph.D. Fellowship, SPIE scholarship 2020–21, Kidger Scholarship 2021*, advisor: Simon Thibault (physics)
Thesis: “Génération de designs de lentilles avec l'apprentissage profond”
now post-doc at Princeton
- 2019–2022 **Arman Afrasiyabi**, advisor: Christian Gagné (ECE)
Thesis: “Representation Learning for Few-Shot Image Classification”
now post-doc at Yale
- 2017–2021 **Mathieu Garon**, co-advisor: Denis Laurendeau (ECE)
Thesis: “Data-driven 3D reasoning for augmented reality”
last seen at Depix
- 2019–2021 **Maxime Tremblay**, co-advisor: André Zaccarin
Thesis: “Vision numérique avec peu d'étiquettes : segmentation d'objet et analyse de l'impact de la pluie”
last seen at ESDC (Government of Canada)
- 2017–2020 **Mojtaba Parsaee**, *Sentinel North Ph.D. scholarship*, advisor: Claude Demers (architecture), co-advisor: Marc Hébert (medicine)
Thesis: “Biophilic and photobiological developments of adaptive high-performance building envelopes for Northern Canada”
last seen as post-doc researcher at U. Laval
- 2014–2020 **Marc-André Gardner**, *Alexander Graham Bell Canada Graduate Scholarship*, co-advisor: Christian Gagné (ECE)
Thesis: “Learning to Estimate Indoor Illumination”
last seen at Bentley Systems
- 2016–2020 **Jinsong Zhang**
Thesis: “Data-driven HDR Illumination from Outdoor Images”
last seen at Bentley Systems

- 2014–2018 **Yannick Hold-Geoffroy**, *FRQ-NT Ph.D. Scholarship, Graduate Studies Honor Roll, 2018 CIPPRS Doctoral Dissertation Award*, co-advisor: Paulo Gotardo (Disney Research Zurich)
Thesis: “Learning Geometric and Lighting priors from Natural Images”
last seen at Adobe Research
[Graduated M.S. Students](#)
- 2021–2023 **Lucas Valença**, *Graduate Studies Honor Roll*, in collaboration with Adobe, co-advisor: Yannick Hold-Geoffroy (Adobe)
Thesis: “Modeling Outdoor Illumination on Natural Images”
now Ph.D. student at McGill
- 2020–2023 **Yohan Poirier-Ginter**, *Graduate Studies Honor Roll*, in collaboration with Gearbox, INRIA Sophia-Antipolis
Thesis: “La restauration d’image non-supervisée avec StyleGAN”
now Ph.D. student
- 2021–2023 **Dominique Piché-Meunier**, *NSERC and FRQ-NT MS Scholarships, Graduate Studies Honor Roll*, in collaboration with Adobe, co-advisor: Yannick Hold-Geoffroy (Adobe)
Thesis: “Estimation automatique de la profondeur de champ dans les images”
last seen at Adobe
- 2021–2022 **Pulkit Gera**, advisor: P.J. Narayanan (IIIT Hyderabad)
Thesis: “Casual scene capture and editing for AR/VR applications”
now Ph.D. student at MPI Saarbrücken
- 2020–2021 **Cyril Blanc**, co-advisor: Christian Gagné (ECE), in collaboration with Intact
Thesis: “Caractérisation automatique d’immeuble depuis une image de façade”
last seen at Flanders Make
- 2019–2021 **Étienne Dubeau**, in collaboration with Thales, INRIA Paris
Thesis: “Suivi d’objet en 6 degrés de liberté avec caméra événementielle”
last seen at Depix
- 2019–2021 **Antoine Dufour**, in collaboration with Gearbox
Thesis: “Injection de style par blanchissage et coloration dans un réseau génératif profond”
last seen at INO
- 2020–DNF **Luca Blanchout**, co-advisors: Claude Demers (architecture) and Marc Hébert (medicine)
last seen at GFT technologies
- 2020–2021 **Rosalie Kletzander**
Thesis: “Pixel-based 2 DoF Synthesis of 360° Viewpoints with Flow-Based Interpolation”
last seen at Fraunhofer Institute
- 2018–2021 **Tesnim Hadhri**, in collaboration with Thales
Thesis: “Single View Depth Estimation from Train Images”
last seen at Torngats
- 2018–2020 **Louis-Philippe Asselin**, co-advisor: Denis Laurendeau (ECE), in collaboration with Creaform
Thesis: “Deep SVBRDF Estimation in the Real-World”
last seen at Bentley Systems
- 2017–2019 **Geoffroi Côté**, *FRQ-NT M.S. Scholarship*, advisor: Simon Thibault (physics)
Thesis: “Deep Learning for Lens Design”
now a Ph.D. student in my group
- 2015–2017 **Félix Labrie-Larrivée**, co-advisor: Denis Laurendeau (ECE), in collaboration with Creaform
Thesis: “Depth Texture Synthesis for Realistic Architectural Modeling”
last seen at INO
- 2015–2016 **Mathieu Garon**, *Mitacs Accelerate Internship*, in collaboration with Frima Studio
Thesis: “Deep 6-DOF Tracking”
now a Ph.D. student in my group
- 2014–2016 **Sébastien Michaud**, advisor: Philippe Giguère (computer sciencer)
Thesis: “Influence of Complex Environments on LiDAR-Based Robot Navigation”
last seen at Can-Explore

Graduate research interns

- 2019 **Julie Buquet**, Institut d'Optique Graduate School, co-supervised with Simon Thibault (physics)
- 2018–2019 **Thomas Nestmeyer**, Max Planck Institute for Intelligent Systems (MPI), project in collaboration with Facebook Reality Labs
last seen at Hyundai MOBIS
- 2016–2018 **Henrique Weber**, Université Laval
last seen at INO
- 2014–2018 **Dan Calian**, University College London (UK), project in collaboration with Disney Research
last seen at Deep Mind
- 2014 **Jinsong Zhang**, Beihang University (China)
now Ph.D. student in my group
- 2014 **Mert Kiliçkaya, Hacettepe U. (Turkey)**, *REPARTI International Internship*
now Ph.D. student at University of Amsterdam
- 2014–2015 **Minghui Tan**, Yale (USA), project in collaboration with Disney Research, LA
last seen at Google
- 2013–2015 **Miguel Granados**, Max Planck Institute (Germany), project in collaboration with Disney Research, Pittsburgh
last seen at Magic Leap
- 2013 **Natasha Kholgade Banerjee**, CMU (USA), project in collaboration with Disney Research, Pittsburgh
now Assistant Professor at Clarkson U.

Undergraduate research interns

- 2023 **Junming Chen**, *MITACS Globalink International Scholarship*, CS undergraduate, Northwestern University, China
- 2023 **Émile Bergeron**, *NSERC Undergraduate Student Research Award*, ECE undergraduate
- 2023 **Justin Lagüe**, *NSERC Undergraduate Student Research Award*, ECE undergraduate
- 2023 **Yasmine Sahnoun**, CS/biology undergraduate
- 2023 **Charles Beaulieu**, CS undergraduate
- 2022 **Aryan Garg**, *MITACS Globalink International Scholarship*, ECE undergraduate, India, IIT Mandi, India
- 2022 **Isabelle Eysseric**, CS undergraduate
last seen at AI developer, SKEMA Business School
- 2022 **Justin Lagüe**, *NSERC Undergraduate Student Research Award*, ECE undergraduate
- 2022 **Frédéric Fortier-Chouinard**, *NSERC Undergraduate Student Research Award*, ECE undergraduate
last seen as MS student, U. Laval
- 2021–2022 **Charles Renaud**, *NSERC Undergraduate Student Research Award*, ECE undergraduate
last seen as MS student U. Laval
- 2021 **David Ibarzabal**, *NSERC Undergraduate Student Research Award*, ECE undergraduate
- 2021 **Pulkit Gera**, *MITACS Globalink International Scholarship*, ECE undergraduate, India, IIIT Hyderabad, India
last seen as PhD student, MPI Saarbrücken, Germany
- 2020–2021 **Pascal Audet**, *NSERC Undergraduate Student Research Award*, ECE undergraduate
last seen as MS student, U. Laval

- 2020–2021 **Dominique Piché-Meunier**, *NSERC Undergraduate Student Research Award*, ECE undergraduate
last seen at Adobe
- 2019 **Bowei Chen**, *MITACS Globalink International Scholarship*, ECE undergraduate, China
last seen as Ph.D. student, University of Washington
- 2019 **Colin Panter**, Physics undergraduate, co-supervised with Frédéric Bretzner (neurobiology)
- 2019 **Jérémy Roy**, ECE undergraduate
last seen as Director of innovation, Neek Studio
- 2018 **Akshaya Athwale**, *MITACS Globalink International Scholarship*, ECE undergraduate, IIT Dhanbad, India
now Ph.D. student in my group
- 2017 **Marie-Joëlle Gosselin**, *NSERC Undergraduate Student Research Award*, ECE undergraduate
last seen as Scientific developer, Creaform
- 2017 **Aditya Shekhar**, *MITACS Globalink International Scholarship*, ECE undergraduate, IIT Guwahati, India
last seen as Senior associate, Boston Consulting Group
- 2016–2017 **Pierre-Olivier Boulet**, CS undergraduate
last seen as Full-stack developer, Korem
- 2016–2017 **Dominic Bilodeau**, ECE undergraduate, project in collaboration with University of Kyoto
last seen as Back-end developer, Stamped Technologies
- 2016 **Charles-Olivier Dufresne Camaro**, *NSERC Undergraduate Student Research Award*, ECE undergraduate, project in collaboration with Umanx
last seen as Ph.D. student, UBC Okanagan
- 2015–2016 **Louis-Philippe Asselin**, *Faculty of Science and Engineering Research Fellowship*, ECE undergraduate
last seen as Applied AI Scientist, Bentley Systems
- 2015–2016 **Frédéric St-Pierre**, *NSERC Undergraduate Student Research Award 2015–16*, ECE undergraduate
last seen at CAE
- 2014–2016 **Louis-Émile Robitaille**, ECE undergraduate
M.S. student at Université Laval
- 2014–2015 **Mathieu Garon**, ECE undergraduate (now graduated)
last seen as Co-founder and CTO, Depix
- 2015 **Julien Becirovski**, ECE undergraduate
last seen as CEO, Proto Lab Québec
- 2014–2015 **Diane Fournier**, ECE undergraduate (now graduated)
last seen as Developer, Optel Vision
- 2014 **Michael Monette**, Physical eng. undergraduate (now graduated)
last seen at EXFO
- 2008 **Joseph Rollo**, CS undergraduate (now graduated)
last seen at General Dynamics
- 2007 **Nicholas Heckman**, CS undergraduate (now graduated)
last seen at Microsoft
- [Research professionals](#)
- 2016–2019 **Maxime Tremblay**, Computer Vision and Systems Lab, supervision of 50% of his time during 2 periods of 6 months

- 2017 **Thierry Moszkowicz**, Computer Vision and Systems Lab, supervision of 40% of his time during 6 months
- 2016 **Benoit Duinat**, Geomatics Lab, supervision of 30% of his time during 4 months, in collaboration with Sylvie Daniel
- 2016 **Oleg Boulanov**, Computer Vision and Systems Lab, supervision of 50% of his time during 6 months

PROFESSIONAL EXPERIENCE

- 2011–2012 **Computer Vision Scientist**, *Tandent Vision Science Inc.*, Pittsburgh, USA
Full-time researcher.
- 2006 **Software Engineer**, *Penthera Technologies Inc.*, Pittsburgh, USA
Full-time software engineer.

LANGUAGES

- French Native
English Fluent
Spanish Conversational

PROFESSIONAL AFFILIATIONS

- 2014–... **Ordre des Ingénieurs du Québec**