Christian Gagné, PhD, ing.

Director of the Institute Intelligence and Data (IID)
Canada-CIFAR AI Chair, Associate Academic Member of Mila
Member of CVSL / CeRVIM / BDRC / REPARTI / UNIQUE / CERVO / VITAM / OBVIA
Full professor at the Electrical Engineering and Computer Engineering Department
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Training

- **PhD in Electrical Engineering**, Université Laval, 2005.

  Thesis: *Algorithmes évolutionnaires appliqués à la reconnaissance des formes et à la conception optique.*
  Committee: Marc Parizeau (supervisor), Denis Laurendeau, Robert Sabourin, and Marc Schoenauer.

- **B.Eng. in Computer Engineering**, Université Laval, 2000.

Professional Experience

- **Director**, Institute Intelligence and Data, Université Laval (Québec, QC, Canada), since 2019 (on leave, January-August 2023).
- **Full Professor**, Electrical Engineering and Computer Engineering Department, Université Laval (Québec, QC, Canada), since 2018.
- **Deputy Director**, Big Data Research Centre, Université Laval (Québec, QC, Canada), 2018-2019.
- **Associate Professor**, Electrical Engineering and Computer Engineering Department, Université Laval (Québec, QC, Canada), 2013–2018.
- **Assistant Professor**, Electrical Engineering and Computer Engineering Department, Université Laval (Québec, QC, Canada), 2008–2013.
- **Research Analyst**, Research and Development Department, MacDonald, Dettwiler and Associates Ltd. (Vancouver, BC, Canada), 2007–2008.
- **Consultant**, Informatique WGZ Inc. (Québec, QC, Canada), 2006–2007.
- **Postdoctoral Fellow**, Information Systems Institute, University of Lausanne (Switzerland), 2006.
- **Postdoctoral Fellow**, TAO Team, INRIA Saclay–Île-de-France (Orsay, France), 2005–2006.
- **Lecturer**, Computer Science and Software Engineering Department, Université Laval (Québec, QC, Canada), 2005.
- **Unix/Linux Systems Administrator**, Computer Vision and Systems Laboratory, Université Laval (Québec, QC, Canada), 2001–2004.
- **Teaching Assistant**, Electrical Engineering and Computer Engineering Department, Université Laval (Québec, QC, Canada), 2000–2003.
- **Consultant**, Red Queen Capital Management Inc. (Dallas, TX, USA), 2003.
- **Research Assistant**, Computer Vision and Systems Laboratory, Université Laval (Québec, QC, Canada), 1998–2000.

Professionnal Affiliations

- Full professor at the Electrical Engineering and Computer Engineering Department of Université Laval
- Director of the Institute Intelligence and Data (IID) of Université Laval
- Canada-CIFAR AI Chair
- Associate member to Mila
- Member of the Computer Vision and Systems Laboratory (CVSL)
- Member of the Centre de recherche en Robotique, Vision et Intelligence Machine (CeRVIM) of Université Laval
- Board member of the Big Data Research Centre (BDRC) of Université Laval
- Member of the REPARTI (cyber-physical systems) strategic cluster of the FRQNT
- Member of the UNIQUE (neuroscience and AI) strategic cluster of the FRQNT
- Member of the CERVO (neuroscience) research centre of the FRQS
- Member of the VITAM (sustainable health) research centre of the FRQS
- Researcher-member of the Observatoire international sur les impacts sociétaux de l'IA et du numérique (OBVIA)

Teaching

- GIF-7010 – Advances in Machine Learning, W2024, W2025, W2026.
- GIF-4001/GIF-7005/GIF-7015 – Introduction to Machine Learning, F2009, F2010, F2011, W2013, W2014, F2016, F2017, F2018, F2019, F2020, F2021, F2022, F2023, F2024, F2025.
- GIF-3004 – Real-Time Embedded Systems, W2017, W2018, W2019, W2020, W2021, W2022.
- GIF-3000 – Computer Architecture, F2010, F2011, F2012, F2013, F2016.
- GEL-3005 – Design IV (synthesis), F2008, W2010, A2011, A2014.
- GEL-1001 – Design I (methodology), W2009, W2010, W2011.
- IFT-19968 – Algorithms for the Engineer II, W2009.
- IFT-18254 – Distributed Computer Systems, W2005.

Supervision

PhD Students (on-going)

- **Arian Yavari** Ph.D. in Computer Science (supervisor: Jiayi Hong), since 2026
- **Nayoung Kwon** Ph.D. in Computer Science, since 2025
- **Meryam Chaieb** Ph.D. in Computer Science (supervisor: Bobin Wang), since 2025
- **Frédéric Beaupré**, Ph.D. in Biophotonic (cosupervisor: Flavie Lavoie-Cardinal), since 2021 (fast-track to PhD in 2022)
- **Jonas Ngnawé**, Ph.D in Computer Science (cosupervisor: Frédéric Precioso, Université Côte d'Azur, France), since 2022
- **Sara Karami**, Ph.D. in Electrical Engineering, since 2021
- **Sabyasachi Sahoo**, Ph.D. in Electrical Engineering (cosupervisor: Frédéric Precioso, Université Côte d'Azur, France), since 2021

- **Catherine Bouchard**, PhD in Electrical Engineering (cosupervisor: Flavie Lavoie-Cardinal), since 2019 (fast-track to PhD in 2021)
- **Adam Tupper**, Ph.D. in Electrical Engineering, since 2021
- **Benjamin Léger**, Ph.D. in Electrical Engineering, since 2020
- **Sophie Baillargeon**, Ph.D. in Mathematics (specialization in Statistic) (supervisor: Thierry Duchesne), since 2018

Master's Students with Thesis (on-going)

- **Jacob Côté**, M.Sc. in Computer Science (supervisor: Sophie Gobeil), since 2025
- **Camille Godbout**, M.Sc. in Computer Science (supervisor: Bobin Wang), since 2025
- **Olivier Bussière**, M.Sc. in Computer Science (cosupervisor: Bobin Wang), since 2024
- **Katrine Castonguay**, M.Sc. in Computer Science (supervisor: Flavie Lavoie-Cardinal), since 2024

PhD Students (completed)

- **Fatemeh Nourilenjan Nokabadi**, *Adversarial Robustness of Learning-based Single Object Trackers*, Ph.D. in Electrical Engineering (cosupervisor: Jean-François Lalonde), 2025
- **Arman Afrasiyabi**, *Representation Learning for Few-shot Image Classification*, Ph.D. in Electrical Engineering (cosupervisor: Jean-François Lalonde), 2022
- **Changjian Shui**, *Principled Deep Learning Approaches for Learning from Limited Labeled Data through Distribution Matching*, Ph.D. in Electrical Engineering (cosupervisor: Boyu Wang, Western Ontario), 2022
- **Mahdieh Abbasi**, *Toward Robust Deep Neural Networks*, Ph.D. in Electrical Engineering (cosupervisor: Denis Laurendeau), 2020
- **Marc-André Gardner**, *Learning to Estimate Indoor Illumination*, Ph.D. in Electrical Engineering (supervisor: Jean-François Lalonde), 2020
- **Karol Lina Lopez**, *A Machine Learning Approach for the Smart Charging of Electric Vehicles*, Ph.D. in Electrical Engineering, 2019
- **Julien-Charles Lévesque**, *Bayesian Hyperparameter Optimization: Overfitting, Ensembles and Conditional Spaces*, Ph.D. in Electrical Engineering (cosupervisor: Robert Sabourin, ÉTS Montréal), 2018
- **Audrey Durand**, *Déclinaisons de bandits et leurs applications*, Ph.D. in Electrical Engineering (cosupervisor: Joelle Pineau, McGill), 2017
- **Ahmed Najjar**, *Forage de données de banques administratives en santé*, Ph.D. in Electrical Engineering (cosupervisor: Daniel Reinharz), 2017
- **Vahab Akbarzadeh**, *Spatio-Temporal Coverage Optimization of Sensor Networks*, Ph.D. in Electrical Engineering (cosupervisor: Marc Parizeau), 2016
- **Zahra Toony**, *Extracting Structured Models From Raw Scans of Manufactured Objects: A Step Towards Embedded Intelligent Handheld 3D Scanning*, Ph.D. in Electrical Engineering (supervisor: Denis Laurendeau), 2015
- **François-Michel De Rainville**, *Placement interactif de capteurs mobiles dans des environnements tridimensionnels non convexes*, Ph.D. in Electrical Engineering (cosupervisor: Denis Laurendeau), 2015
- **Meysam Argany**, *Development of a GIS-based method for sensor network deployment and coverage optimization*, Ph.D. in Geomatic Sciences (supervisor: Mir Abolfazl Mostafavi), 2015
- **Darwin Brochero**, *Hydroinformatics and Diversity in Hydrological Ensemble Prediction Dystems*, Ph.D. in Water Engineering (supervisor: François Anctil), 2013

Master's Students with Thesis (completed)

- **Cynthia García Ybarra**, *Adversarial Random Forest for Synthetic Electronic Health Records Generation*, M.Sc. in Computer Science (cosupervisor: Anne-Sophie Charest), 2025
- **Antoine Séverin Ollier**, *Développement d'un module de détection hyperspectrale et résolu dans le temps pour la microscopie STED*, M.Sc. in Electrical Engineering (supervisor: Flavie Lavoie-Cardinal), 2024
- **Thomas Philippon**, *Robustesse des mécanismes de défense adverse basés sur les ensembles de réseaux de neurones*, M.Sc. in Electrical Engineering, 2023
- **Cyril Blanc**, *Caractérisation automatique d'immeuble depuis une image de façade*, M.Sc. in Electrical Engineering (supervisor: Jean-François Lalonde), 2022
- **Mohamed Abderrahmen Abid**, *Diverse Image Generation with Very Low Resolution Conditioning*, M.Sc. in Electrical Engineering, 2021
- **Gabriel Leclerc**, *Apprendre de données positives et non étiquetées: application à la segmentation et la détection d'événements calciques*, M.Sc. in Electrical Engineering (cosupervisor: Flavie Lavoie-Cardinal), 2021
- **Hugo Siqueira Gomes**, *Meta Learning for Population-Based Algorithms in Black-box Optimization*, M.Sc. in Electrical Engineering, 2021
- **Louis-Émile Robitaille**, *Réseaux de neurones pour l'apprentissage de la préférence en microscopie super-résolution*, M.Sc. in Electrical Engineering (cosupervisors : Audrey Durand and Flavie Lavoie-Cardinal), 2021
- **Sébastien De Blois**, *Deep Learning with Multiple Modalities: Making the Most Out of Available Data*, M.Sc. in Electrical Engineering, 2020
- **El Mehdi Megder**, *Approches basées sur l'apprentissage automatique pour l'anticipation de la qualité d'usinage de pièces métalliques*, M.Sc. in Computer Science (supervisor: Jonathan Gaudreault), 2020
- **Marc-André Gardner**, *Contrôle de la croissance de la taille des individus en programmation génétique*, M.Sc. in Electrical Engineering (cosupervisor: Marc Parizeau), 2014
- **Kevin Tanguy**, *Modélisation et optimisation de la recharge bidirectionnelle de véhicules électriques : application à la régulation électrique d'un complexe immobilier*, M.Sc. in Electrical Engineering (cosupervisor: Maxime Dubois), 2013
- **Audrey Durand**, *Simulation et apprentissage Monte-Carlo de stratégies d'intervention en santé publique*, M.Sc. in Electrical Engineering (cosupervisor: Daniel Reinharz), 2011
- **François-Michel De Rainville**, *Design d'expérimentation interactif : Aide à la compréhension de systèmes complexes*, M.Sc. in Electrical Engineering (supervisor: Denis Laurendeau), 2010

Research Assistants

- **Samy Mammeri**, Integrated Mathematics - Computer Science B.Sc. Student, May 2025 - now
- **Harold Toukam Zanjio**, Computer Engineering B.Eng. Student, May to August 2021
- **Ruoyu Liu**, Computer Science – Artificial Intelligence M.Sc. Student, May to December 2020
- **Catherine Villeneuve**, Mathematics - Computer Science B.Sc. Student, May to August 2019
- **Keven Voyer**, Computer Science – Artificial Intelligence M.Sc. Student, May to August 2019
- **Philippe-André Luneau**, Mathematics - Computer Science B.Sc. Student, September to December 2018
- **Jonathan Marek**, Computer Engineering B.Eng. Student, May to December 2017
- **Louis-Émile Robitaille**, Computer Engineering B.Eng. Student, May to August 2016
- **Jean-Alexandre Beaumont**, Software Engineering B.Eng. Student, May to August 2016

- **Diane Fournier**, Computer Engineering B.Eng. Student, January 2013 to December 2014
- **Antoine Bois**, Electrical Engineering B.Eng. Student, May 2012 to April 2013
- **Marc-André Gardner**, Computer Engineering B.Eng. Student, May 2009 to April 2012
- **Carl Poirier**, Computer Engineering B.Eng. Student, May 2010 to April 2011
- **Émile Papillon-Corbeil**, Physic Engineering B.Eng. Student, May 2011 to July 2011
- **Camille Besse**, Computer Science PhD Student, June 2010 to August 2010
- **Majid Mallis**, Mathematics and Computer Science B.Sc. Student, January 2009 to December 2009
- **Alexandre Boily**, Computer Engineering B.Eng. Student, May 2009 to August 2010
- **Audrey Durand**, Computer Engineering B.Eng. Student, August 2008 to April 2009

Postdoctoral Fellows

- **Fatemeh Gholi Zadeh Kharrat** (cosupervisor: Caroline Sirois), January 2020 to January 2023
- **Fan Zhou** (supervisor: Mario Marchand), January to December 2022
- **Theresa Wiesner** (supervisor: Flavie Lavoie-Cardinal), September 2021 to August 2022
- **Ihsen Hedhli**, January 2018 to October 2020
- **Azadeh Sadat Mozafari**, November 2017 to October 2019
- **Farkhondeh Kiaee**, January to December 2016
- **Matthew Walker**, June 2009 to June 2011
- **Albert Hung-Ren Ko**, February to October 2010

Research Professionals

- **Arman Afrasiyabi**, Computer Vision and Systems Laboratory, October and November 2015
- **Diane Fournier**, Laboratoire de simulation du dépistage génétique, technical supervision, January to August 2015
- **Thierry Moszkowicz**, Computer Vision and Systems Laboratory, supervision at 50%, June 2014 to January 2015
- **Xavier Douville**, Laboratoire de simulation du dépistage génétique, technical supervision, October 2011 to September 2012
- **Sylvain Comtois**, Computer Vision and Systems Laboratory, supervision at 50%, June 2010 to June 2014
- **Julien-Charles Lévesque**, Computer Vision and Systems Laboratory, January to May 2011
- **Mathieu Gagnon**, Laboratoire de simulation du dépistage génétique, technical supervision, September 2009 to August 2011

Visiting Interns

- **Soumili Ghosh**, B.Tech. in Computer Science and Engineering, Kalinga Institute of Industrial Technology (KIIT), Bhubaneswar, India, May to July 2024
- **Kunal Samanta**, B.Sc. in Mathematics and Computer Science student, Indian Institute of Science (IISc), Bangalore, India, May to July 2023
- **Apoorva Verma**, B.Tech. in Electronics and Communication student, Indian Institute of Technology (IIT), Roorkee, India, May to July 2023

- **Itziar Casado-O'Mara Corral**, Master's in Telecommunication student, University of the Basque Country (UPV/EHU), Spain, May to June 2023
- **Chi Huynh**, Engineering undergraduate student, École Polytechnique, Palaiseau, France, March to August 2023
- **David Wittenberg**, PhD student at the University of Mainz, Germany, April to June 2022
- **Guillaume Camus**, Electronic and Computer Engineering undergraduate student, ENSEA, Cergy-Pontoise, France, November 2019 to February 2020
- **Steeven Janny**, Master 1 student in Electronic, Electric and Automatic, ENS Paris-Saclay, France, May to August 2018
- **Luis Enrique Güitrón**, Computer Engineering undergraduate student, Technologico de Monterrey, Santa Fe Campus, Mexico, May to August 2018
- **Sai Krishna Kalyan**, Data Mining and Knowledge Management MSc student, Université Lumière (Lyon 2), France and Universitat Politècnica de Catalunya, Barcelona, Spain, March to August 2017
- **Yosha Tomar**, Electronics and Electrical Engineering undergraduate student, Indian Institute of Technology Guwahati, India, May to July 2017
- **Thibault Parpaite**, Computer Science undergraduate student at University of Bordeaux, France, May to August 2016
- **Farkhondeh Kiaee**, Electrical Engineering PhD student at Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran, May 2014 to November 2015
- **Ludovic Arnold**, Computer Science PhD student at Université Paris-Sud (Paris XI), Orsay, France, Mars to September 2011
- **Bibhash Kumar Jha**, Mathematics and Computer Science B.Sc. student at Indian Institute of Technology of Kharagpur, India, May to July 2010
- **Juan Luis Jimenez Laredo**, Computer Engineering PhD student at the University of Granada, Spain, October to November 2008

Visiting Researcher

- **Hamid Boubertakh**, University of Jijel, Algeria, October to November 2010; September to October 2011; May 2012

Research Grants and Contracts

Operating Grants obtained as Main Applicant

- *Canada-CIFAR Artificial Intelligence Chair*

  CIFAR
  500 000 $ / 5 years (2025–2030)

- *Neuro-symbolic Approaches for Robust and Interpretable Machine Learning*

  Discovery Grant (individual), NSERC
  235 000 $ / 5 years (2025–2030)

- *Generative Models for Symbolic Models*

  IVADO IAR^3 R10 - AI Safety and Alignment
  80 000 $ / 2 years (2024–2026)

- *Technical team - R8*

  IVADO IAR^3 R8 - Healthcare Systems

75 000 $ / 2 years (2024–2026)

- *Générations de données synthétiques à la RAMQ*

  Catalyst Grant, CIFAR / Mila
  44 000 $ / 2 years (2023–2024)

- *L'intelligence artificielle en santé, une formation expérientielle*

  Programme NovaScience: Volet Soutien aux projets, MÉI
  227 393 $ / 2 years (2021–2023)

- *Canada-CIFAR AI Chair*

  CIFAR
  500 000 $ / 6 years (2019–2025)

- *Deep Learning with Little Labelled Data*

  Discovery Grant (individual), NSERC
  246 000 $ / 6 years (2019–2025)

- *DRIFTERS: Deep Radar Interpretation For Tracking and Enhancement of Raw Signal*

  Collaborative Research and Development Grant, NSERC
  Partner: Thales Canada
  259 566$ / 3 years (2019–2022)

- *Novel Approaches for Practical Machine Learning*

  PROMPT-Québec
  Partenaire: E Machine Learning and Thales Canada
  411 500 $ / 3 years (2017–2020).

- *Novel Approaches for Practical Machine Learning*

  Accelerate (cluster of 45 units), Mitacs
  Partner: E Machine Learning
  600 000 $ / 3 years (2016–2020)

- *Intelligence artificielle appliquée pour l'analyse, l'optimisation et l'innovation*

  Accelerate (cluster of 14 units), Mitacs
  Parters: Axes Networks, Can-Explore, Co-Operators, Coveo, Desjardins Assurances Générales, Bentley Canada
  186 667 $ / 1 year (2019)

- *Assessment of deep learning for analyzing radar signals in maritime environment*

  Accelerate (3 units), Mitacs
  Partner: Thales Canada
  45 000 $ / 1 year (2019)

- *Adaptive Learning Methods for Deeply Embedded Devices*

  Discovery Grant (individual), NSERC
  195 000 $ / 5 years (2014–2019)

- *Personalized Recommendations for a Social Network of Photographers*

  Engage Grant (individual), NSERC
  Partner: 500px
  24 926 $ / 6 months (2016)

- *Sélection de méthodes pour la recommandation personnalisée de documents*

  Engage Grant (individual), NSERC
  Partner: Coveo

24 984 $ / 6 months (2016)

- *Improving Models for User-Specific State Assessment: A Realtime Querying and Learning Technique*

  Accelerate (1 unit), Mitacs
  Partner: Thales Canada
  15 000 $ / 6 months (2015–2016)

- *Analyse de données massives provenant de médias sociaux*

  Accelerate (1 unit), Mitacs
  Partner: Thales Canada
  15 000 $ / 6 months (2015)

- *Modèle d'évaluation de l'état des transformateurs pour la pérennité et la maintenance*

  Accelerate (2 units), Mitacs
  Partner: Hydro-Québec
  30 000 $ / 6 months (2015)

- *Intelligence machine pour la prédiction de l'état de transformateurs de haute tension*

  Engage Grant (individual), NSERC
  Partner: Hydro-Québec
  24 992 $ / 6 months (2014–2015)

- *Smartphone Application for Electric and Conventional Vehicles Data Collection*

  Engage Grant (individual), NSERC
  Partner: Thales Canada
  24 987 $ / 6 months (2014–2015)

- *Enabling Autonomic Computing with Computational Intelligence*

  Discovery Grant (individual), NSERC
  110 000 $ / 5 years (2009–2014)

- *Installation et essai d'une borne de recharge supportant la technologie "vehicle-to-grid" (V2G)*

  Programme de recherche en partenariat contribuant à la réduction et la séquestration des gaz à effet de serre (team project), FQRNT
  250 000 $ / 3 years (2010–2013)

- *Integrating Developmental Genetic Programming and Terrain Analysis Techniques in GIS-based Sensor Placement Systems*

  Strategic Industrial Initiative (team project), GEOIDE NCE
  270 000 $ / 2 years (2010–2012) + 25 000 $ from MDA Systems Ltd

- *Apprentissage à grande échelle parallèle pour supercalculateurs*

  New University Researchers Start Up Program (individual), FQRNT
  40 000 $ / 2 years (2009–2011) + 19 709 $ for equipment (2009–2010)

Operating Grants obtained as Co-applicant

- *Projet MAIN: Myo-prothèse à Apprentissage Interactif et Neuro-renforcement*

  Initiative STRATÉGIA, FRQNT
  Main applicant: Benoît Gosselin
  886 828 $ / 3 years (2024–2027)

- *Union Neurosciences et Intelligence Artificielle Québec (UNIQUE)*

  Strategic Clusters, FRQNT
  Main applicant: Karim Jerbi

3 060 000 $ / 5 years (2022–2027)

- *Méthodes d'apprentissage automatique pour le développement de la microscopie intelligente des dynamiques cellulaires*

  Projet de recherche en équipe, FRQNT
  Main applicant: Flavie Lavoie-Cardinal
  240 000 $ / 4 years (2020–2023)

- *Extreme zooming on intestinal permeability and the western-style diet: Unravelling the role of dietary antigens on the prevalence of cardiometabolic and mental health diseases in the North*

  Deuxième appel à projets majeurs, Sentinelle Nord
  Main applicant: Flavie Lavoie-Cardinal and Denis Boudreau
  739 350 $ / 5 years (2020–2024)

- *Can Astronomy and Machine Learning help detect neurodegeneraion?*

  Catalyst Fund, CIFAR
  Main applicants: Renée Hložek and Audrey Durand
  50 000 $ / 2 years (2021–2023)

- *Déterminer la qualité de la polypharmacie chez les aînés: une approche basée sur l'intelligence artificielle*

  Collaborative Health Research Projects, CIHR and NSERC
  Main applicant: Caroline Sirois
  1 207 610 $ / 3 years (2020–2023)

- *Re-penser la découvrabilité, ou comment garantir l'accès à des contenus culturels canadiens dans l'environnement numérique*

  Insight Grants, SSHRC
  Main applicant: Véronique Guèvremont
  294 172$ / 3 years (2020–2023)

- *Mettre l'IA au service de la diversité des expressions culturelles: une exploration des conditions à remplir pour que les algorithmes de recommandation favorisent la découvrabilité des oeuvres littéraires québécoises dans l'environnement numérique*

  Appel à projets innovants (2019-2022) - Volet 1, OBVIA
  Main applicant: Véronique Guèvremont
  159 469$ / 3 years (2019–2022)

- *Predicting population risk of suicide using health administrative data*

  New Frontiers in Research Fund - Exploration
  Main applicant: JianLi Wang
  250 000 $ / 2 years (2020–2022)

- *Suivi de la qualité de la pratique de l'électroconvulsivothérapie au Québec basé sur le recueil de données médico-administratives, cliniques et socio-démographiques en contexte réel*

  Données de recherche en contexte réel - Partenariat Innovation-Québec-JANSSEN, FRQS
  Main applicant: Alain Lesage
  245 044 $ / 2 years (2019–2021)

- *DEpendable and Explainable Learning in Aerospace*

  Collaborative Research and Development Grant, NSERC
  Partners: Thales, Bell Helicopter, CAE, Bombardier, CRIAQ
  Main applicants: François Laviolette and Guilano Antoniol
  5 905 512 $ / 5 years (2019–2024)

- *REPARTI – Systèmes cyberphysiques et intelligence machine matérialisée*

Strategic Clusters, FRQNT
Main applicant: Clément Gosselin
2 888 000 $ / 6 years (2019–2025)

- *Machine learning for the insurance industry: predictive models, fraud detection, and fairness*

  Collaborative Research and Development Grant, NSERC
  Partner: SSQ Assurance
  Main applicant: Mario Marchand
  652 175$ / 5 years (2019–2024)

- *Big data analytics in insurance*

  Collaborative Research and Development Grant, NSERC
  Partner: Intact Financial Corporation
  Main applicant: François Laviolette
  2 413 040 $ / 5 years (2018–2023)

- *Nouvelles approches pour le pilotage d'un atelier d'usinage de pièces métalliques de précision basées sur les données*

  Collaborative Research and Development Grant, NSERC
  Partner: APN
  Main applicant: Jonathan Gaudreault
  230 700 $ / 5 years (2017–2022)

- *PEGASUS-2 - PErsonalized Genomics for prenatal Abnormalities Screening USing maternal blood: Towards First Tier Screening and Beyond*

  Large-scale Applied Research Project Competition, Genome Canada
  Main applicants: François Rousseau and Sylvie Langlois
  10 801 250 $ / 4 years (2018–2022)

- *Union Neurosciences et Intelligence Artificielle Québec (UNIQUE)*

  Strategic Clusters, FRQNT
  Main applicant: Karim Jerbi
  600 000 $ / 2 years (2019–2021)

- *E-Community Health and Toxicity*

  Accelerate (cluster of 118 units), Mitacs
  Partners: Two Hat Security
  Main applicant: Richard Khoury
  1 693 333 $ / 3 years (2017–2021)

- *BRITE: Bus RapId Transit systEm*

  Collaborative Research and Development Grant, NSERC
  Partners: Thales Canada, LeddarTech
  Main applicant: Denis Laurendeau
  426 910 $ / 3 years (2017–2020)

- *Sécurité urbaine: entraînement, soutien opérationnel, protection des infrastructures et analyses prédictives*

  Accelerate (cluster of 42 units), Mitacs
  Partners: Thales Canada, UMANX
  Main applicant: Sébastien Tremblay
  560 000 $ / 3 years (2017–2019)

- *Regroupement stratégique pour l'Étude des Environnements PARTagés Intelligents répartis*

  Strategic Clusters, FRQNT

Main applicant: Denis Laurendeau
2 150 000 $ / 6 years (2013–2019)

- *Solutions intelligentes pour l'efficience et la fluidité urbaine*

  Accelerate (cluster of 51 units), Mitacs
  Partners: Thales Canada, Parc technologique du Québec Métropolitain, and Cascades
  Main applicant: Sébastien Tremblay
  680 000 $ / 3 years (2015–2018)

- *Convergence d'intelligence géospatiale pour l'innovation*

  Appui aux réseaux d'innovation, FRQNT
  Main applicant: Mir Abolfazl Mostafavi
  300 000 $ / 3 years (2013–2016)

- *Simulating cost-effectiveness of screening strategies for preeclampsia risk in pregnant women*

  Operating Grant, CIHR
  Main applicants: Daniel Reinharz and Yves Giguère
  91 266 $ / 2 years (2013–2014)

- *Simulation du coût/efficacité et du coût/utilité du dépistage des gènes de prédisposition au cancer du sein*

  Recherches sur les services de santé, FRQS
  Main applicant: François Rousseau
  105 268 $ / 2 years (2012–2014)

- *LSD – Laboratoire de Simulation du Dépistage génétique*

  Operating Grant, CIHR
  Main applicant: Daniel Reinharz
  517 233 $ / 5 years (2008–2013)

- *Regroupement stratégique pour l'Étude des Environnements PARTagés Intelligents répartis*

  Strategic Cluster, FQRNT
  Main applicant: Denis Laurendeau
  2 100 000 $ / 6 years (2006–2013)

- *Infrastructure for Wide Market Adoption of PHEV*

  AUTO21 NCE
  Main applicants: Maxime Dubois (2009–2011) and Éric Bibeau (2011–2012)
  246 000 $ / 3 years (2009–2012)

- *Simulating the Cost/Effectiveness of Screening Strategies for Cystic Fibrosis*

  Operating Grant, CIHR
  Main applicants: Daniel Reinharz and Patrick Daigneault
  63 815 $ / 1 year (2011)

- *La simulation comme outil d'évaluation de la pertinence et du retour sur l'investissement des activités en santé publique au Québec*

  Action concertée, FQRSC
  Main applicant: Daniel Reinharz
  177 708 $ / 3 years (2008–2011)

Research Contracts

- *Intégration de techniques de Programmation Génétique et d'Analyse de Terrain dans un Système de Placement de Capteurs*

Defence R&D Canada – Valcartier (RDDC Valcartier)
24 900 $ / 1 year (2012)

- *Development of Multiobjective Optimization Techniques for Sensor Network Layout*
  Defence R&D Canada – Valcartier (RDDC Valcartier)
  138 121 $ / 2 years (2009–2011)

Scholarships

- FQRNT (Québec): Postdoctoral Research Scholarship (30 000 $/year), 2005–2006.
- ERCIM (Europe): Postdoctoral Fellowship Programme (50 000 $/year approx.), 2005–2006.
- NSERC (Canada): Postgraduate Scholarships-Doctoral (21 000 $/year), 2003–2005.
- FQRNT (Québec): Doctoral Research Scholarship (20 000 $/year, declined), 2002–2005.
- NSERC (Canada): Postgraduate Scholarships-Master's (17 300 $/year), 2001–2003.
- FCAR (Québec): Master's Research Scholarship (15 000 $/year, declined 2nd year), 2000–2002.
- Fondation Bechtel du Canada (500 $), 1999.
- NSERC (Canada): Undergraduate Student Research Award (4000 $), 1999.

Awards

- Canadian AI 2020 Best Paper for *Toward adversarial robustness by diversity in an ensemble of specialized deep neural networks*
- GECCO 2009 Best Paper, *Real-World Application* track, for *Optimizing Low-Discrepancy Sequences with an Evolutionary Algorithm.*
- GECCO 2002 Best Paper, *Evolvable Hardware* track, for *Lens System Design and Re-Engineering with Evolutionary Algorithms.*

Professional Associations

- Ordre des ingénieurs du Québec (OIQ), Engineer-in-Training (E.I.T.) between 2000 and 2011, Engineer (Eng.) since 2011.
- Institute of Electrical and Electronics Engineers (IEEE), member since 2008.
- Association for Computing Machinery (ACM), professional member since 2010.

Software

- *DEAP: Distributed Evolutionary Algorithms in Python.* Open source software available at `https://github.com/deap/deap`.
- *SCHNAPS: Generic Population-based Simulator for Public Health.* Open source software available at `https://github.com/audurand/schnaps`.
- *Open BEAGLE: A Generic C++ Evolutionary Computation Framework.* Open source software available at `https://github.com/chgagne/beagle`.
- *BEAGLE Puppy: A Minimalist GP Library in C++.* Open source software available at `http://beagle.gel.ulaval.ca/puppy`.

Scientific Events Organization

- Co-organizer, *Rendez-vous IA Québec*, Québec, QC, 2018–2023.
- Co-organizer, *First Workshop on Interactive Labeling and Data Augmentation for Vision*, ICCV 2021.
- Publicity chair, *Genetic and Evolutionary Computation Conference* (GECCO) 2014, Vancouver, BC, 2014.
- Responsible, Section 200 (Physical Sciences, Mathematics, and Engineering), Scientific Committee of the 80th Congress of the Acfas (French-speaking Association for the Advancement of Knowledge), Montreal, QC, 2012.
- Co-organizer, *Evolutionary Art Competition*, GECCO 2009–2012
- Organizer, *Undergraduate Student Workshop*, GECCO 2011, Dublin, Ireland, 2011.
- Competitions chair, GECCO 2010, Portland, OR, 2010.
- Local chair, GECCO 2009, Montreal, QC, 2009.
- Sponsors chair, *High Performance Computing Symposium* (HPCS), Québec, QC, 2008.

Committee

International Committee

- Scientific Committee, DIM AI4IDF, since 2023.
- Executive Board, ACM Special Interest Group on Evolutionary Computation (SIGEVO), 2017–2023.

National Committee

- National Resources Allocation Committee, Compute Canada, 2009–2013, 2017.

Reviewer for Granting Agencies

- External reviewer, Discovery Grants, Natural Sciences and Engineering Research Council (NSERC), Canada, 18 applications reviewed, 2010, 2015, 2017–2024, 2026.
- External reviewer, Alliance Grants, Natural Sciences and Engineering Research Council (NSERC), Canada, 1 application reviewed, 2022.
- External reviewer, Idea to Innovation, Natural Sciences and Engineering Research Council (NSERC), Canada, 1 application reviewed, 2022.
- Reviewer, Établissement de la relève professorale, Fonds de recherche du Québec – Nature et technologies (FRQNT), Canada, 5 applications reviewed, 2022.
- External reviewer, Canada Research Chairs (CRC), Canada, 1 application reviewed, 2022.
- Reviewer, Accelerate, Mitacs, Canada, 7 applications reviewed, 2011, 2013, 2016–2017, 2019, 2020, 2022.
- Reviewer, Programme de projets de recherche en équipe, Fonds de recherche du Québec – Nature et technologies (FRQNT), Canada, 3 applications reviewed, 2021.
- Reviewer, Novascience, Ministère de l'économie et de l'innovation du Québec, Canada, 20 applications reviewed, 2020.
- Reviewer, Fundamental Research Projects Grants, IVADO, Canada, 20 applications reviewed, 2020.
- Reviewer, PARTENAR-IA, PRIMA-Québec, Canada, 1 application reviewed, 2020.
- Reviewer, PARTENAR-IA, PROMPT-Québec, Canada, 3 applications reviewed, 2019.

- External reviewer, Strategic Partnership Grants, Natural Sciences and Engineering Research Council (NSERC), Canada, 1 application reviewed, 2016.
- External reviewer, Agence nationale de la recherche (ANR), France, 1 application reviewed, 2015.
- External reviewer, College and Community Innovation Program, Natural Sciences and Engineering Research Council (NSERC), Canada, 1 application reviewed, 2013.

Program Committees of Scientific Journals

- Editorial Committee, *Genetic Programming and Evolvable Machines*, since 2013.
- Guest Editor, *International Journal of Arts and Technology (IJART)*, special section, 2011.
- Reviewer, *Transactions on Machine Learning Research*, 2022.
- Reviewer, *SN Computer Science*, 2021.
- Reviewer, *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2020.
- Reviewer, *IEEE Transactions on Evolutionary Computation*, 2009–2013, 2016–2017.
- Reviewer, *Genetic Programming and Evolvable Machines*, 2007, 2009, 2012–2014, 2016.
- Reviewer, *IET Electrical Systems in Transportation*, 2016.
- Reviewer, *Water*, 2015.
- Reviewer, *Applied Soft Computing*, 2010–2014.
- Reviewer, *European Journal on Operation Research*, 2014.
- Reviewer, *IEEE Transactions on Smart Grid*, 2013.
- Reviewer, *IEEE Transactions on Cybernetics*, 2013.
- Reviewer, *Information Fusion*, 2008, 2011, 2013.
- Reviewer, *IEEE Transactions on Systems, Man, and Cybernetics, Part B*, 2007, 2011.
- Reviewer, *Neural Computing and Applications*, 2011.
- Reviewer, *Computational Intelligence*, 2010.
- Reviewer, *IEEE Transactions on Fuzzy Systems*, 2008.
- Reviewer, *Canadian Journal of Electrical and Computer Engineering*, 2008.
- Reviewer, *Journal of Parallel and Distributed Computing*, 2005.
- Reviewer, *Journal of Heuristics*, 2004.

Program Committees of Scientific Conferences

- Track co-chair, *Neuroevolution* track, *Genetic and Evolutionary Computation COnference* (GECCO), 2026.
- Track co-chair, *Evolutionary Machine Learning* track, *Genetic and Evolutionary Computation COnference* (GECCO), 2021.
- Track co-chair, *Digital Entertainment Technology and Art* track, *Genetic and Evolutionary Computation COnference* (GECCO), 2011.
- Reviewer, *International Conference on Learning Representations* (ICLR), 2018–2021, 2023.
- Reviewer, *Neural Information Processing Systems* (NeurIPS), 2016–2022.
- Reviewer, *International Conference on Machine Learning* (ICML), 2018–2022.
- Reviewer, *Computer Vision and Pattern Recognition* (CVPR), 2021–2022.

- Reviewer, *Association for the Advancement of Artificial Intelligence* (AAAI), 2015–2016, 2020, 2022.
- Reviewer, *Genetic and Evolutionary Computation COnference* (GECCO), 2003–2010, 2013–2014, 2016–2020, 2022.
- Reviewer, *International Conference on Computer Vision* (ICCV), 2021.
- Reviewer, *International Joint Conference on Artificial Intelligence* (IJCAI), 2018–2019, 2021.
- Reviewer, *European Conference on Genetic Programming* (EuroGP), 2006–2011, 2013–2014, 2016–2017, 2019–2021.
- Reviewer, *Uncertainty in Artificial Intelligence* (UAI), 2019, 2020.
- Reviewer, *Reinforcement Learning and Decision Making* (RLDM), 2017, 2019.
- Reviewer, *International Joint Conference on Artificial Intelligence* (IJCAI), 2007, 2018.
- Reviewer, *Canadian Conference on Electrical and Computer Engineering* (CCECE), 2018.
- Reviewer, *European Conference on Artificial Intelligence* (ECAI), 2016.
- Reviewer, *Digital Intelligence* (DI), 2016.
- Reviewer, *IEEE Vehicle Power and Propulsion Conference* (VPPC), 2016.
- Reviewer, *IEEE International Conference on Distributed Smart Cameras* (ICDSC), 2013.
- Reviewer, *IEEE Congress on Evolutionary Computation* (IEEE-CEC), 2006, 2008–2011.
- Reviewer, *Artificial Evolution* (EA), 2009, 2011, 2013.
- Reviewer, *Canadian Conference on Computer and Robotic Vision* (CRV), 2009.
- Reviewer, *International Conference on Document Analysis and Recognition* (ICDAR), 2007.

Local Committees

- Advising committee on artificial intelligence, Université Laval, since 2023.
- Graduate programs committee, Computer Science and Software Engineering Department, 2018–2021.
- Graduate programs committee, Electrical Engineering and Computer Engineering Department, 2017–2021.
- Respondant for Computer Engineering, table des répondants pour l'accréditation des programmes de génie, Université Laval, 2017–2018.
- Undergraduate programs committee, Electrical Engineering and Computer Engineering Department, 2010-2018.
- Working group on transportation electrification, Institut Technologies de l'information et société, 2014.
- Secretary of the assembly, Engineering and Computer Engineering Department, 2008–2011.
- President of the working group on microprocessor teaching, undergraduate programs committee, Electrical Engineering and Computer Engineering Department, 2008–2009.

Publications

Accepted or Published papers in Peer-reviewed Scientific Journals

[J54] F. Beaupré, A. Bilodeau, T. Wiesner, G. Leclerc, M. Lemieux, G. Nadeau, K. Castonguay, B. Fan, S. Labrecque, R. Hložek, P. De Koninck, C. Gagné, and F. Lavoie-Cardinal. "Quantitative Analysis of Miniature Synaptic Calcium Transients Using Positive Unlabeled Deep Learning". *Digital Discovery* 4.1 (2025).

[J53] A. Deschênes, A. Ollier, M. Lafontaine, A. Michaud-Gagnon, J.-G. S. Santiague, A. Bilodeau, C. Gagné, P. De Koninck, and F. Lavoie-Cardinal. "Enhancing STED Microscopy via Fluorescence Lifetime Unmixing and filtering in Two-species SPLIT-STED". *Methods in Microscopy* (2025).

[J52] A. Tupper and C. Gagné. "Revisiting Data Augmentation for Ultrasound Images". *Transactions on Machine Learning Research* 7 (2025). URL: https://openreview.net/forum?id=iGcxlTLIL5.

[J51] F. Gholi Zadeh Kharrat, C. Gagné, A. Lesage, G. Gariépy, J.-F. Pelletier, C. Brousseau-Paradis, L. Rochette, E. Pelletier, P. Lévesque, M. Mohammed, et al. "Explainable artificial intelligence models for predicting risk of suicide using health administrative data in Quebec". *PLoS one* 19.4 (2024), e0301117. URL: https://doi.org/10.1371/journal.pone.0301117.

[J50] J. Li, Y. Lai, R. Wang, C. Shui, S. Sahoo, C. X. Ling, S. Yang, B. Wang, C. Gagné, and F. Zhou. "Hessian Aware Low-Rank Perturbation for Order-Robust Continual Learning". *IEEE Transactions on Knowledge and Data Engineering* 36.11 (2024). URL: https://arxiv.org/abs/2311.15161.

[J49] F. Nourilenjan Nokabadi, J.-F. Lalonde, and C. Gagné. "Reproducibility Study on Adversarial Attacks Against Robust Transformer Trackers". *Transactions on Machine Learning Research* 5 (2024). URL: https://openreview.net/forum?id=FEEKR0Vl9s.

[J48] J. Wang, F. G. Z. Kharrat, G. Gariépy, C. Gagné, J.-F. Pelletier, V. K. Massamba, P. Lévesque, M. Mohammed, A. Lesage, et al. "Predicting the population risk of suicide using routinely collected health administrative data in Quebec, Canada: Model-Based Synthetic Estimation Study". *JMIR public health and surveillance* 10.1 (2024), e52773. URL: https://publichealth.jmir.org/2024/1/e52773/.

[J47] C. Bouchard, T. Wiesner, A. Deschênes, A. Bilodeau, B. Turcotte, C. Gagné, and F. Lavoie-Cardinal. "Resolution enhancement with a task-assisted GAN to guide optical nanoscopy image analysis and acquisition". *Nature Machine Intelligence* 5 (2023), pp. 830–844. URL: https://doi.org/10.1038/s42256-023-00689-3.

[J46] S. Lafrenière, F. Gholi-Zadeh-Kharrat, C. Sirois, V. Massamba, L. Rochette, C. Brousseau-Paradis, S. Patry, C. Gagné, M. Lemasson, G. Gariépy, et al. "The 5-year longitudinal diagnostic profile and health services utilization of patients treated with electroconvulsive therapy in Quebec: a population-based study". *Social Psychiatry and Psychiatric Epidemiology* 58.4 (2023), pp. 629–639. URL: https://doi.org/10.1007/s00127-022-02369-w.

[J45] C. Shui, R. Pu, G. Xu, J. Wen, F. Zhou, C. Gagné, C. X. Ling, and B. Wang. "Towards More General Loss and Setting in Unsupervised Domain Adaptation". *IEEE Transactions on Knowledge and Data Engineering* (2023). URL: https://doi.org/10.1109/TKDE.2023.3266785.

[J44] C. Shui, W. Wang, I. Hedhli, C. M. Wong, F. Wan, B. Wang, and C. Gagné. "Lifelong Online Learning from Accumulated Knowledge". *ACM Transactions on Knowledge Discovery from Data* 17.4 (2023). URL: https://doi.org/10.1145/3563947.

[J43] B. Wang, J. Mendez, C. Shui, F. Zhou, D. Wu, C. Gagné, and E. Eaton. "Gap Minimization for Knowledge Sharing and Transfer". *Journal of Machine Learning Research (JMLR)* 24.33 (Jan. 2023). URL: https://jmlr.org/papers/v24/22-0099.html.

[J42] J. Wang, F. G. Z. Kharrat, J.-F. Pelletier, L. Rochette, E. Pelletier, P. Lévesque, V. Massamba, C. Brousseau-Paradis, M. Mohammed, G. Gariépy, C. Gagné, and A. Lesage. "A case–control study on predicting population risk of suicide using health administrative data: a research protocol". *BMJ open* 13.2 (2023). URL: http://dx.doi.org/10.1136/bmjopen-2022-066423.

[J41] D. Wittenberg, F. Rothlauf, and C. Gagné. "Denoising autoencoder genetic programming: strategies to control exploration and exploitation in search". *Genetic Programming and Evolvable Machines* 24.2 (2023). URL: https://doi.org/10.1007/s10710-023-09462-2.

[J40] S. Duchesne, D. Gourdeau, P. Archambault, C. Chartrand-Lefebvre, L. Dieumegarde, R. Forghani, C. Gagné, A. Hains, D. Hornstein, H. Le, et al. "Tracking and Predicting COVID-19 Radiological Trajectory using Deep Learning on Chest X-rays: Initial Accuracy Testing". *Scientific Reports* (2022). URL: https://doi.org/10.1101/2020.05.01.20086207.

[J39] D. Gourdeau, O. Potvin, J. H. Biem, F. Cloutier, L. Abrougui, P. Archambault, C. Chartrand-Lefebvre, L. Dieumegarde, C. Gagné, L. Gagnon, et al. "Deep learning of chest X-rays can predict mechanical ventilation outcome in ICU-admitted COVID-19 patients". *Scientific Reports* 12.1 (2022), p. 6193. URL: https://doi.org/10.1038/s41598-022-10136-9.

[J38] C. Shui, Q. Chen, J. Wen, F. Zhou, C. Gagné, and B. Wang. "A novel domain adaptation theory with Jensen-Shannon divergence". *Knowledge-Based Systems* 257 (Dec. 2022). URL: https://doi.org/10.1016/j.knosys.2022.109808.

[J37] C. Shui, B. Wang, and C. Gagné. "On the benefits of representation regularization in invariance based domain generalization". *Machine Learning* 111 (2022), pp. 895–915. URL: https://doi.org/10.1007/s10994-021-06080-w.

[J36] S.-C. Kalla, C. Gagné, M. Zeng, and L. A. Rusch. "Recurrent neural networks achieving MLSE performance for optical channel equalization." *Optics Express* 29.9 (2021), pp. 13033–13047. URL: https://doi.org/10.1364/OE.423103.

[J35] C. Sirois, R. Khoury, A. Durand, P.-L. Deziel, O. Bukhtiyarova, Y. Chiu, D. Talbot, A. Bureau, P. Després, C. Gagné, et al. "Exploring polypharmacy with artificial intelligence: data analysis protocol". *BMC Medical Informatics and Decision Making* 21.1 (2021), pp. 1–8. URL: https://doi.org/10.1186/s12911-021-01583-x.

[J34] F. Lavoie-Cardinal, A. Bilodeau, M. Lemieux, M.-A. Gardner, T. Wiesner, G. Laramée, C. Gagné, and P. De Koninck. "Neuronal activity remodels the F-actin based submembrane lattice in dendrites but not axons of hippocampal neurons". *Scientific reports* 10.1 (2020), pp. 1–17. URL: https://doi.org/10.1038/s41598-020-68180-2.

[J33] J. Lehman, J. Clune, D. Misevic, C. Adami, L. Altenberg, J. Beaulieu, P. J. Bentley, S. Bernard, G. Beslon, D. M. Bryson, et al. "The surprising creativity of digital evolution: A collection of anecdotes from the evolutionary computation and artificial life research communities". *Artificial Life* 26.2 (2020). URL: https://arxiv.org/abs/1803.03453.

[J32] F. Zhou, C. Shui, M. Abbasi, L.-É. Robitaille, B. Wang, and C. Gagné. "Task Similarity Estimation Through Adversarial Multitask Neural Network". *IEEE Transactions on Neural Networks and Learning Systems* 32.2 (2020). URL: http://doi.org/10.1109/TNNLS.2020.3028022.

[J31] K. L. López, C. Gagné, and M.-A. Gardner. "Demand-Side Management using Deep Learning for Smart Charging of Electric Vehicles". *IEEE Transactions on Smart Grid* 10.3 (May 2019). URL: https://doi.org/10.1109/TSG.2018.2808247.

[J30] A. Durand, T. Wiesner, M.-A. Gardner, L.-É. Robitaille, A. Bilodeau, C. Gagné, P. De Koninck, and F. Lavoie-Cardinal. "A machine learning approach for automated optimization of super-resolution optical microscopy". *Nature Communications* 9.5247 (2018). URL: https://www.nature.com/articles/s41467-018-07668-y.

[J29] A. Najjar, D. Reinharz, C. Girouard, and C. Gagné. "A Two-Step Approach for Mining Patient Treatment Pathways in Administrative Healthcare Databases". *Artificial Intelligence in Medecine* 87 (May 2018). URL: https://doi.org/10.1016/j.artmed.2018.03.004.

[J28] L. Nshimyumukiza, J.-A. Beaumont, J. Duplantie, S. Langlois, J. Little, F. Audibert, C. McCabe, J. Gekas, Y. Giguère, C. Gagné, D. Reinharz, and F. Rousseau. "Cell-Free DNA–Based Non-invasive Prenatal Screening for Common Aneuploidies in a Canadian Province: A Cost-Effectiveness Analysis". *Journal of Obstetrics and Gynaecology Canada* 40.1 (Jan. 2018), pp. 48–60. URL: https://doi.org/10.1016/j.jogc.2017.05.015.

[J27] M.-A. Gardner, K. Sunkavalli, E. Yumer, X. Shen, E. Gambaretto, C. Gagné, and J.-F. Lalonde. "Learning to Predict Indoor Illumination from a Single Image". *ACM Transactions on Graphics (SIGGRAPH Asia)* 9.4 (Nov. 2017). URL: https://arxiv.org/abs/1704.00090.

[J26] F. Kiaee, C. Gagné, and H. Sheikhzadeh. "A Double-Layer ELM with Added Feature Selection Ability using a Sparse Bayesian Approach". *Neurocomputing* 216 (Dec. 2016), pp. 371–380. URL: http://dx.doi.org/10.1016/j.neucom.2016.08.011.

[J25] L. Nshimyumukiza, X. Douville, D. Fournier, J. Duplantie, R. Daher, I. Charlebois, J. Longtin, J. Papenburg, M. Guay, M. Boissinot, M. G. Bergeron, D. Boudreau, C. Gagné, F. Rousseau, and D. Reinharz. "Cost effectiveness analysis of antiviral treatment in the management of seasonal influenza A: point-of-care rapid test versus clinical judgment". *Influenza and Other Respiratory Viruses* 10.2 (Mar. 2016), pp. 113–121. URL: http://dx.doi.org/10.1111/irv.12359.

[J24] K. Tanguy, M. Dubois, K. L. Lopez, and C. Gagné. "Optimization Model and Economic Assessment of Collaborative Charging using Vehicle-To-Building". *Sustainable Cities and Society* 26 (Oct. 2016), pp. 496–506. URL: http://dx.doi.org/10.1016/j.scs.2016.03.012.

[J23] M. Argany, M. A. Mostafavi, and C. Gagné. "Context-Aware Local Optimization of Sensor Network Deployment". *Journal of Sensor and Actuator Networks* 4.3 (2015), pp. 160–188. URL: http://dx.doi.org/10.3390/jsan4030160.

[J22] M.-A. Gardner, C. Gagné, and M. Parizeau. "Controlling Code Growth by Dynamically Shaping the Genotype Size Distribution". *Genetic Programming and Evolvable Machines* 16.4 (2015), pp. 455–498. URL: https://doi.org/10.1007/s10710-015-9242-8.

[J21] K. L. Lopez, C. Gagné, G. Castellanos-Dominguez, and M. Orozco-Alzate. "Training subset selection in Hourly Ontario Energy Price forecasting using time series clustering-based stratification". *Neurocomputing* 156.25-05-2015 (2015), pp. 268–279. URL: https://doi.org/10.1016/j.neucom.2014.12.052.

[J20] Z. Toony, D. Laurendeau, and C. Gagné. "Describing 3D Geometric Primitives Using the Gaussian Sphere and the Gaussian Accumulator". *3D Research* 6.4 (Dec. 2015). URL: http://dx.doi.org/10.1007/s13319-015-0074-3.

[J19] V. Akbarzadeh, J.-C. Lévesque, C. Gagné, and M. Parizeau. "Efficient Sensor Placement Optimization Using Gradient Descent and Probabilistic Coverage". *Sensors* 14 (2014), pp. 15525–15552. URL: https://doi.org/10.3390/s140815525.

[J18] L. Nshimyumukiza, A. Bois, P. Daigneault, L. Lands, A.-M. Laberge, D. Fournier, J. Duplantie, Y. Giguère, J. Gekas, C. Gagné, F. Rousseau, and D. Reinharz. "Cost-Effectiveness of Newborn Screening for Cystic Fibrosis: A Simulation Study". *Journal of Cystic Fibrosis* 13.3 (2014), pp. 267–274. URL: https://doi.org/10.1016/j.jcf.2013.10.012.

[J17] V. Akbarzadeh, C. Gagné, M. Parizeau, M. Argany, and M. A. Mostafavi. "Probabilistic Sensing Model for Line-of-sight Coverage-based Sensor Placement Optimization". *IEEE Transactions on Instrumentation and Measurement* 62.2 (Feb. 2013), pp. 293–303.

[J16] J. Duplantie, O. M. Gonzalez, A. Bois, L. Nshimyumukiza, J. Gekas, E. Bujold, V. Morin, M. Vallée, Y. Giguère, C. Gagné, F. Rousseau, and D. Reinharz. "Cost-Effectiveness of the Management of Rh-Negative Pregnant Women". *Journal of Obstetrics and Gyneacology of Canada* 35.8 (2013), pp. 730–740.

[J15] L. Nshimyumukiza, A. Durand, M. Gagnon, X. Douville, S. Morin, C. Lindsay, J. Duplantie, C. Gagné, S. Jean, Y. Giguère, S. Dodin, F. Rousseau, and D. Reinharz. "An economic evaluation: Simulation of the cost/effectiveness and cost/utility of universal prevention strategies against osteoporosis-related fractures". *Journal of Bone and Mineral Research* 28.2 (2013), pp. 383–394.

[J14] L. Nshimyumukiza, J. Duplantie, M. Gagnon, X. Douville, D. Fournier, C. Lindsay, M. Parent, A. Milot, Y. Giguère, C. Gagné, F. Rousseau, and D. Reinharz. "Dabigatran versus warfarin under standard or pharmacogenetic-guided management for the prevention of stroke and systemic thromboembolism in patients with atrial fibrillation: a cost/utility analysis using an analytic decision model". *Thrombosis Journal* 11.14 (2013).

[J13] M. Argany, M. A. Mostafavi, V. Akbarzadeh, C. Gagné, and R. Yaagoubi. "Impact of the Quality of Spatial 3D City Models on Sensor Networks Placement Optimization". *GEOMATICA* 66.4 (2012), pp. 291–305. URL: http://pubs.cig-acsg.ca/doi/abs/10.5623/cig2012-055.

[J12] F.-M. De Rainville, F.-A. Fortin, M.-A. Gardner, M. Parizeau, and C. Gagné. "DEAP: Evolutionary Algorithms Made Easy". *Journal of Machine Learning Research* 13.Jul (2012), pp. 2171–2175.

[J11] F.-M. De Rainville, C. Gagné, O. Teytaud, and D. Laurendeau. "Evolutionary Optimization of Low-Discrepancy Sequences". *ACM Transactions on Modeling and Computer Simulation* 22.2 (2012), 9:1–9:25.

[J10] A. Durand, C. Gagné, L. Nshimyumukiza, M. Gagnon, F. Rousseau, Y. Giguère, and D. Reinharz. "Population-based Simulation for Public Health: Generic Software Infrastructure and its Application to Osteoporosis". *IEEE transactions on Systems, Man, and Cybernetics, Part A* 42.6 (2012), pp. 1396–1409.

[J9] M. Argany, M. A. Mostafavi, F. Karimipour, and C. Gagné. "A GIS Based Wireless Sensor Network Coverage Estimation and Optimization: A Voronoi Approach". *Transactions on Computational Science* 14 (2011), pp. 151–172.

[J8] D. Brochero, F. Anctil, and C. Gagné. "Simplifying a Hydrological Ensemble Prediction System with a Backward Greedy Selection of Members, Part I: Optimization Criteria". *Hydrology and Earth System Sciences* 15.11 (2011), pp. 3307–3325.

[J7] D. Brochero, F. Anctil, and C. Gagné. "Simplifying a Hydrological Ensemble Prediction System with a Backward Greedy Selection of Members, Part II: Generalization in Time and Space". *Hydrology and Earth System Sciences* 15.11 (2011), pp. 3327–3341.

[J6] C. Gagné, J. Beaulieu, M. Parizeau, and S. Thibault. "Human-Competitive Lens System Design with Evolution Strategies". *Applied Soft Computing* 8.4 (2008), pp. 1439–1452.

[J5] F. Ratle, C. Gagné, A.-L. Terrettaz-Zufferey, M. Kanevski, P. Esseiva, and O. Ribaux. "Advanced Clustering Methods for Mining Chemical Databases in Forensic Science". *Chemometrics and Intelligent Laboratory Systems* 90.2 (2008), pp. 123–131.

[J4] C. Gagné and M. Parizeau. "Co-evolution of Nearest Neighbor Classifiers". *International Journal of Pattern Recognition and Artificial Intelligence* 21.5 (2007), pp. 921–946.

[J3] M. Dubreuil, C. Gagné, and M. Parizeau. "Analysis of a Master-Slave Architecture for Distributed Evolutionary Computations". *IEEE transactions on Systems, Man, and Cybernetics, Part B* 36.1 (2006), pp. 229–235.

[J2] C. Gagné and M. Parizeau. "Genericity in Evolutionary Computation Software Tools: Principles and Case Study". *International Journal on Artificial Intelligence Tools* 15.2 (2006), pp. 173–194.

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Last update: January 3, 2026.