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Template: Full CV

Professor Martin Vallières

Previous First Name: Martin
Correspondence language: French
Sex: Male
Date of Birth: 8/31
Canadian Residency Status: Canadian Citizen
Country of Citizenship: Canada

Contact Information

The primary information is denoted by (*)

Address

Primary Affiliation (*)

Université de Sherbrooke
2500, Boulevard de l'Université
Faculté des Sciences, Local D4-2005
Sherbrooke Quebec J1K 2R1
Canada

Telephone

Work (*)	1-819-821-8000 extension: 65116

Email

Work (*)	martin.vallieres@usherbrooke.ca

Website

Community	http://www.medomics.ai/

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Professor Martin Vallières

Language Skills

Language	Read	Write	Speak	Understand	Peer Review
English	Yes	Yes	Yes	Yes	Yes
French	Yes	Yes	Yes	Yes	Yes

Degrees

2012/9 - 2017/9
Doctorate, Doctor of Philosophy, Medical Physics, McGill University
Degree Status: Completed

Supervisors: Issam El Naqa, 2012/9 - 2017/9

2010/9 - 2012/12
Master's Thesis, Masters of Science, Medical Radiation Physics, McGill University
Degree Status: Completed

Supervisors: Issam El Naqa, 2011/5 - 2012/12

2006/1 - 2010/5
Bachelor's, Bachelor in Engineering, Physical Engineering, École Polytechnique de Montréal
Degree Status: Completed

Supervisors: None, 2006/9 - 2010/4

Recognitions

2021/12
Cum Laude award - Education Exhibit
Radiological Society of North America
Prize / Award
Education exhibit at the 107th Scientific Assembly and Annual Meeting of the Radiological Society of North America, November 28 – December 2, 2021, McCormick Place, Chicago, Illinois. Each education exhibit presentation is reviewed by the Education Exhibit Awards Committee, a separate entity from the Education Exhibits Committee, during the meeting.

2021/5
Michael S. Patterson Publication Impact Prize in Medical Physics 2021
Canadian Organization of Medical Physicists
Prize / Award
This prize was awarded to recognize a paper that has had a “tremendous impact on the field of medical physics”: https:// doi.org/10.1088/0031-9155/60/14/5471

2018/9
Roblat Medal - 2018 citation prize
Physics in Medicine & Biology (PMB) journal
Prize / Award
This medal was awarded by the "Physics in Medicine and Biology" journal to recognize the paper with the most citations over the past five years: https:// doi.org/10.1088/0031-9155/60/14/5471

2018/1	Top 100 - Read Articles - 2017 Scientific Reports journal Distinction This distinction was awarded by the "Scientific Reports" journal to recognize a paper in the top 100 of read articles in 2017: http://dx.doi.org/10.1038/s41598-017-10371-5
2015/9	1st prize: Rising Star in Medical Physics Symposium 2015 Medical Physics Research Training Network (MPRTN) Prize / Award This prize was awarded by the jury of the Medical Physics Research Training Network (MPRTN) as the best presentation of the symposium (describing novel research in the field of Medical Physics).
2013/7	Abstract selected for “Science Council Session” American Association of Physicists in Medicine Distinction
2010/5	Mention d’Excellence - Baccalauréat École Polytechnique de Montréal Honor

User Profile

Researcher Status: Researcher
Engaged in Clinical Research?: Yes

Research Interests: Martin Vallières is devoting much of his current work to the development of a solution for the integrative modeling of heterogeneous medical data. He leads the development of MEDomicsLab, an open source platform for end-to-end computation in precision medicine. This platform will model heterogeneous data from hospitals using deep learning and machine learning methods based on graph theory. By contributing to the improvement of prediction models in medicine, MEDomicsLab will become a key artificial intelligence tool in the clinic.

Research Specialization Keywords: medical image analysis, machine learning, graph neural networks, federated learning, heterogeneous medical data modeling

Research Centres: Centre de recherche du CHUS

Disciplines Trained In: Oncology, Physical Engineering, Physics

Research Disciplines: Computer Science, Oncology

Areas of Research: Computer Science and Statistics

Fields of Application: Biomedical Aspects of Human Health, Health System Management, Pathogenesis and Treatment of Diseases

Employment

2020/4	Assistant Professor Department of Computer Science, Faculty of Sciences, Université de Sherbrooke Full-time Tenure Status: Tenure Track
2018/7 - 2020/4	Postdoctoral researcher Medical Physics Unit, Faculty of Medicine, McGill University Full-time Tenure Status: Non Tenure Track

2018/9 - 2019/8
Postdoctoral researcher
Department of Radiation Oncology, Parnassus Campus, University of California, San Francisco
Full-time
Tenure Status: Non Tenure Track
Note: from 2018-09 to 2019-08, I spent half my time at UCSF and the other half at McGill (by alternating 3-month work stays).

2017/7 - 2018/6
Postdoctoral researcher
Laboratoire de Traitement d'Imagerie Médicale (LaTIM), Université de Brest, INSERM UMR 1101, Brest, France
Full-time
Tenure Status: Non Tenure Track

2012/9 - 2016/5
Graduate Teaching Assistant
Physics and Medical Physics, McGill University
Full-time
Tenure Status: Non Tenure Track

Affiliations

The primary affiliation is denoted by (*)

2021/6 — Adjunct Professor, Université Laval

2020/4 — Associate Member, Mila - Quebec Artificial Intelligence Institute

2020/4 — Researcher - Cancer and Imaging Axes, Centre Hospitalier Univ. de Sherbrooke

(*) 2020/4 — Assistant Professor, Department of Computer Science, Université de Sherbrooke

Leaves of Absence and Impact on Research

2021/9 - 2021/12
Parental, Université de Sherbrooke
Parental leave from 2021-09-01 to 2021-12-31.

Research Funding History

Awarded [n=6]

2021/4 - 2026/3
Principal Investigator
Multilevel graphical modeling of heterogeneous healthcare data in a federated learning setting, Grant
Clinical Research Project?: Yes

Funding Sources:

2021/4 - 2026/3
Natural Sciences and Engineering Research Council of Canada (NSERC)
Discovery Grants
Total Funding - 132,500 (Canadian dollar)
Portion of Funding Received - 132,500 (Canadian dollar)
Funding Competitive?: Yes

2020/4 - 2025/3
Principal Investigator
Development of an open-source computation platform for multi-omics data modeling in oncology, Research Chair
Clinical Research Project?: Yes

Funding Sources:

2020/4 - 2025/3 Canada CIFAR AI Chair, Mila
CIFAR Pan-Canadian Artificial Intelligence Strategy
Total Funding - 500,000 (Canadian dollar)
Portion of Funding Received - 500,000 (Canadian dollar)
Funding Competitive?: Yes

2022/4 - 2024/3
Principal Investigator

Multi-level graphical modeling of healthcare data for developing mortality risk models, Grant
Clinical Research Project?: Yes

Funding Sources:

2022/4 - 2024/3 Fonds de recherche du Québec - Nature et technologies (FRQNT)
Établissement de la relève professorale
Total Funding - 80,000 (Canadian dollar)
Portion of Funding Received - 80,000 (Canadian dollar)
Funding Competitive?: Yes

2021/1 - 2022/12
Principal Investigator

Development of Artificial Intelligence Techniques for Automated Electric Power Asset Identification, Grant
Clinical Research Project?: No

Funding Sources:

2021/1 - 2022/12 InnovÉÉ - Innovation en énergie électrique
Total Funding - 66,200 (Canadian dollar)
Portion of Funding Received - 66,200 (Canadian dollar)
Funding Competitive?: Yes

Co-investigator : François Bouffard

2021/1 - 2022/12
Principal Investigator

Development of Artificial Intelligence Techniques for Automated Electric Power Asset Identification, Grant
Clinical Research Project?: No

Funding Sources:

2021/1 - 2022/12 Natural Sciences and Engineering Research Council of Canada (NSERC)
Alliance Grants (ALLRP)
Total Funding - 66,200 (Canadian dollar)
Portion of Funding Received - 66,200 (Canadian dollar)
Funding Competitive?: Yes

Co-investigator : François Bouffard

2020/10 - 2022/9
Co-investigator

Financement en IA – Volet Propulsion des universités, Grant
Clinical Research Project?: Yes

Funding Sources:

2020/10 - 2022/9 PROMPT-Québec
Total Funding - 500,000 (Canadian dollar)
Portion of Funding Received - 0 (Canadian dollar)
Funding Competitive?: Yes

Co-investigator : Jodoin, Pierre-Marc; Lepage, Martin;

Principal Investigator : Valiquette, Louis

Completed [n=19]

2020/4 - 2022/3
Principal Investigator

Start-up funds, Faculty of Sciences, Grant
Clinical Research Project?: Yes

Funding Sources:

2020/4 - 2022/3 University of Sherbrooke
Start-up funds
Total Funding - 30,000 (Canadian dollar)
Portion of Funding Received - 30,000 (Canadian dollar)
Funding Competitive?: No

2020/4 - 2022/3
Principal Investigator

Start-up funds, University Hospital (CHUS), Grant
Clinical Research Project?: Yes

Funding Sources:

2020/4 - 2022/3 Centre de Recherche du Centre Hospitalier de l'Université de Sherbrooke Inc. (CRCHUS) (Sherbrooke, QC)
Start-up funds
Total Funding - 40,000 (Canadian dollar)
Portion of Funding Received - 40,000 (Canadian dollar)
Funding Competitive?: No

2020/9 - 2020/12
Principal Investigator

Energ-AI: Artificial Intelligence in Electrical Power Engineering, Grant
Clinical Research Project?: No

Funding Sources:

2020/9 - 2020/12 Mathematics of Information Technology and Complex Systems (MITACS)
Mitacs Accelerate
Total Funding - 15,000 (Canadian dollar)
Portion of Funding Received - 15,000 (Canadian dollar)
Funding Competitive?: Yes

Co-applicant : Jean-Hugues Lapointe; Shreyas Sunil Kulkarni; Simon Giard-Leroux;

Co-investigator : François Bouffard

2018/4 - 2020/3
Principal Applicant

Postdoctoral fellowship, Scholarship
Clinical Research Project?: Yes

2013/9 - 2016/8
Principal Applicant

Graduate Excellence Fellowship Travel Award, Scholarship
Clinical Research Project?: Yes

Funding Sources:

McGill University
Total Funding - 4,000 (Canadian dollar)
Portion of Funding Received - 4,000 (Canadian dollar)
Funding Competitive?: Yes

2015/9 - 2016/8
Co-applicant

Texture Imaging: A novel technique to guide treatment and improve quality of life in patients with Non-Small Cell Lung Carcinoma (NSCLC), Grant
Clinical Research Project?: Yes

Funding Sources:

Rossy Cancer Network
CQI Research Fund
Total Funding - 25,000 (Canadian dollar)
Portion of Funding Received - 0 (Canadian dollar)
Funding Competitive?: Yes

Co-applicant : Belley, G; Cohen, V; Hirsh, V; Nair, J; Probst, S; Reinhold, C;

Principal Investigator : Taylor, J

2015/9 - 2016/8
Co-applicant

Marching Ahead: Imaging Biomarkers, a new revolution in patient management and care for Human Papilloma Virus (HPV) Positive Oropharyngeal Cancer, Grant
Clinical Research Project?: Yes

Funding Sources:

Rossy Cancer Network
CQI Research Fund
Total Funding - 25,000 (Canadian dollar)
Portion of Funding Received - 0 (Canadian dollar)
Funding Competitive?: Yes

Co-applicant : Nair, J; Probst, S; Reinhold, C; Shenouda, G; Sultanem, K; Torres, C; Zeitouni, A;

Principal Investigator : Chankowsky, J

2015/9 - 2016/8
Principal Applicant

Studentship - Faculty of Medicine, Scholarship
Clinical Research Project?: Yes

Funding Sources:

McGill University
Total Funding - 12,000 (Canadian dollar)
Portion of Funding Received - 12,000 (Canadian dollar)
Funding Competitive?: Yes

2015/9 - 2016/8
Principal Applicant

Expanding Horizons Travel Grant, Scholarship
Clinical Research Project?: Yes

Funding Sources:

American Association of Physicists in Medicine (AAPM)
Total Funding - 1,000 (United States dollar)
Portion of Funding Received - 1,000 (United States dollar)

2015/1 - 2015/12
Principal Applicant

Samuel S. Lerner Memorial Award, Scholarship
Clinical Research Project?: Yes

Funding Sources:

McGill University
Total Funding - 250 (Canadian dollar)
Portion of Funding Received - 250 (Canadian dollar)
Funding Competitive?: Yes

2012/9 - 2015/8
Principal Applicant

Alexander Graham Bell Canada Graduate Scholarship (CGS D), Scholarship
Clinical Research Project?: Yes

Funding Sources:

Natural Sciences and Engineering Research Council of Canada (NSERC)
Total Funding - 105,000 (Canadian dollar)
Portion of Funding Received - 105,000 (Canadian dollar)
Funding Competitive?: Yes

2012/9 - 2013/8
Principal Applicant

Institute Community Support (ICS) Travel Award, Scholarship
Clinical Research Project?: Yes

Funding Sources:

Canadian Institutes of Health Research (CIHR)
Total Funding - 1,000 (Canadian dollar)
Portion of Funding Received - 1,000 (Canadian dollar)
Funding Competitive?: Yes

2010/9 - 2012/8
Principal Applicant

Bourse de formation de maîtrise, Scholarship
Clinical Research Project?: Yes
Research Uptake: Declined at first year (conflict with NSERC CGS M)

Funding Sources:

Fonds de recherche du Québec - Santé (FRQS)
Total Funding - 30,000 (Canadian dollar)
Portion of Funding Received - 30,000 (Canadian dollar)
Funding Competitive?: Yes

2010/9 - 2011/8
Principal Applicant

Alexander Graham Bell Canada Graduate Scholarship (CGS M), Scholarship

Funding Sources:

Natural Sciences and Engineering Research Council of Canada (NSERC)
Total Funding - 17,500 (Canadian dollar)
Portion of Funding Received - 17,500 (Canadian dollar)
Funding Competitive?: Yes

2010/5 - 2010/8
Principal Applicant

Undergraduate Student Research Award, Scholarship
Clinical Research Project?: Yes

Funding Sources:

Natural Sciences and Engineering Research Council of Canada (NSERC)
Total Funding - 4,500 (Canadian dollar)
Portion of Funding Received - 4,500 (Canadian dollar)
Funding Competitive?: Yes

2007/1 - 2010/5
Principal Applicant

Excellence Internal Awards, Scholarship

Funding Sources:

École Polytechnique de Montréal
Total Funding - 4,500 (Canadian dollar)
Portion of Funding Received - 4,500 (Canadian dollar)
Funding Competitive?: Yes

2008/9 - 2009/8
Principal Applicant

Student Mobility Travel Grant, Scholarship

Funding Sources:

Ministère de l'Éducation, du Loisir et du Sport du Québec
Total Funding - 2,000 (Canadian dollar)
Portion of Funding Received - 2,000 (Canadian dollar)
Funding Competitive?: Yes

2008/5 - 2008/8
Principal Applicant

Undergraduate Student Research Award, Scholarship

Funding Sources:

Natural Sciences and Engineering Research Council of Canada (NSERC)
Total Funding - 4,500 (Canadian dollar)
Portion of Funding Received - 4,500 (Canadian dollar)
Funding Competitive?: Yes

2007/5 - 2007/8
Principal Applicant

Undergraduate Student Research Award, Scholarship

Funding Sources:

Natural Sciences and Engineering Research Council of Canada (NSERC)
Total Funding - 4,500 (Canadian dollar)
Portion of Funding Received - 4,500 (Canadian dollar)
Funding Competitive?: Yes

Declined [n=4]

2018/4 - 2020/3
Principal Applicant

Postdoctoral fellowship (PDF), Scholarship
Clinical Research Project?: Yes

Funding Sources:

Natural Sciences and Engineering Research Council of Canada (NSERC)
Total Funding - 90,000 (Canadian dollar)
Portion of Funding Received - 90,000 (Canadian dollar)
Funding Competitive?: Yes

2015/9 - 2016/8
Principal Applicant

Studentship – Research Institute, Scholarship
Clinical Research Project?: Yes

Funding Sources:

McGill University Health Centre (MUHC)
Total Funding - 8,925 (Canadian dollar)
Portion of Funding Received - 8,925 (Canadian dollar)
Funding Competitive?: Yes

2012/9 - 2015/8
Principal Applicant

Bourse de formation de doctorat, Scholarship
Clinical Research Project?: Yes

Funding Sources:

Fonds de recherche du Québec - Santé (FRQS)
Total Funding - 60,000 (Canadian dollar)
Portion of Funding Received - 60,000 (Canadian dollar)
Funding Competitive?: Yes

2010/9 - 2012/8
Principal Applicant

Bourse de maîtrise en recherche, Scholarship
Clinical Research Project?: Yes

Funding Sources:

Fonds de recherche du Québec - Nature et technologies (FRQNT)
Total Funding - 30,000 (Canadian dollar)
Portion of Funding Received - 30,000 (Canadian dollar)
Funding Competitive?: Yes

Courses Taught

2022/01/01 - 2022/04/30
Professor, Computer Science, Université de Sherbrooke
Course Title: Techniques d'apprentissage
Course Code: IFT603/712
Course Topic: Machine learning
Course Level: Graduate
Academic Session: Winter
Number of Credits: 3

2022/01/01 - 2022/04/30
Professor, Computer Science, Université de Sherbrooke
Course Title: Analyse d'images
Course Code: IMN259
Course Topic: Image analysis
Course Level: Undergraduate
Academic Session: Winter
Number of Credits: 3

2021/01/01 - 2021/04/30
Professor, Computer Science, Université de Sherbrooke
Course Title: Programmation scientifique en Python
Course Code: IFT211
Course Topic: Python programming
Course Level: Undergraduate
Academic Session: Winter
Number of Credits: 1

2021/01/01 - 2021/04/30
Professor, Computer Science, Université de Sherbrooke
Course Title: Analyse d'images
Course Code: IMN259
Course Topic: Image analysis
Course Level: Undergraduate
Academic Session: Winter
Number of Credits: 3

2020/09/01 - 2020/12/31
Professor, Computer Science, Université de Sherbrooke
Course Title: Techniques d'apprentissage
Course Code: IFT603/712
Course Topic: Machine learning
Course Level: Graduate
Academic Session: Fall
Number of Credits: 3

2019/03/28 - 2019/03/28
Lecturer, McGill University
Course Title: Advanced Topics in Radiation Oncology Physics
Course Code: MDPH 702
Course Topic: Basics of machine learning and convolutional neural networks (CNNs)
Course Level: Graduate
Number of Students: 10
Guest Lecture?: Yes

2018/04/23 - 2018/04/23
Lecturer, L'Institut de Recherche en Santé de l'Université de Nantes (IRS-UN)
Course Title: Radiomique en TEP/DM: promesses, limites méthodologiques et perspectives
Course Code: Lecture
Course Topic: Introduction to Radiomics
Course Level: Graduate
Number of Students: 30
Guest Lecture?: Yes

2016/04/25 - 2016/04/25
Lecturer, McGill University
Course Title: Advanced Topics in Radiation Oncology Physics
Course Code: MDPH 702
Course Topic: Machine learning basics
Course Level: Graduate
Number of Students: 10
Guest Lecture?: Yes

Student/Postdoctoral Supervision

Bachelor's [n=17]

2022/5 - 2022/8
Principal Supervisor
Nicolas Longchamps (In Progress) , Université de Sherbrooke
Student Degree Start Date: 2022/5
Thesis/Project Title: [internship] Developer of MEDomicsLab: open-source computation platform for integrative data modeling in oncology
Present Position: Undergraduate student, Université de Sherbrooke

2022/5 - 2022/8
Principal Supervisor
Corentin Gauthier (In Progress) , Université de Sherbrooke
Student Degree Start Date: 2022/5
Thesis/Project Title: [internship] Developer of MEDomicsLab: open-source computation platform for integrative data modeling in oncology
Present Position: Undergraduate student, Université de Sherbrooke

2022/5 - 2022/8
Principal Supervisor
Guillaume Blain (In Progress) , Université de Sherbrooke
Student Degree Start Date: 2022/5
Thesis/Project Title: [internship] Developer of MEDomicsLab: open-source computation platform for integrative data modeling in oncology
Present Position: Undergraduate student, Université de Sherbrooke

2022/5 - 2022/8
Principal Supervisor
Clarisse Cheng (In Progress) , Université de Sherbrooke
Student Degree Start Date: 2022/5
Thesis/Project Title: [internship] Developer of MEDomicsLab: open-source computation platform for integrative data modeling in oncology
Present Position: Undergraduate student, Université de Sherbrooke

2022/1 - 2022/4 Principal Supervisor	Steven Robidas (Completed) , Université de Sherbrooke Student Degree Start Date: 2022/1 Student Degree Received Date: 2022/4 Thesis/Project Title: [end-of-study research project] Distributed random forests
2022/1 - 2022/4 Principal Supervisor	Vincent Latourelle (Completed) , Université de Sherbrooke Student Degree Start Date: 2022/1 Student Degree Received Date: 2022/4 Thesis/Project Title: [end-of-study research project] Distributed random forests
2022/1 - 2022/4 Principal Supervisor	Guillaume Cléroux (Completed) , Université de Sherbrooke Student Degree Start Date: 2022/1 Student Degree Received Date: 2022/4 Thesis/Project Title: [internship] Region-based convolutional neural networks for object identification in electrical power engineering Present Position: Undergraduate student, Université de Sherbrooke
2021/11 - 2022/8 Principal Supervisor	Hakima Laribi (In Progress) , Université de Sherbrooke Student Degree Start Date: 2021/11 Student Degree Expected Date: 2022/8 Thesis/Project Title: [international internship] Multi-level graphical modeling of heterogeneous healthcare data for developing mortality risk models Present Position: Undergraduate student, Université de Sherbrooke
2021/9 - 2021/12 Principal Supervisor	Achille Lanctôt-Saumure (Completed) , Université de Sherbrooke Student Degree Start Date: 2021/9 Student Degree Received Date: 2021/12 Thesis/Project Title: [internship] Region-based convolutional neural networks for object identification in electrical power engineering Present Position: Undergraduate student, Université de Sherbrooke
2021/5 - 2021/8 Principal Supervisor	Guillaume Cléroux (Completed) , Université de Sherbrooke Student Degree Start Date: 2021/5 Student Degree Received Date: 2021/8 Thesis/Project Title: [internship] Region-based convolutional neural networks for object identification in electrical power engineering Present Position: Undergraduate student, Université de Sherbrooke
2021/5 - 2021/8 Principal Supervisor	Alex Chorel-Campanozzi (Completed) , Université de Sherbrooke Student Degree Start Date: 2021/5 Student Degree Received Date: 2021/8 Thesis/Project Title: [internship] Region-based convolutional neural networks for object identification in electrical power engineering Present Position: Undergraduate student, Université de Sherbrooke
2021/1 - 2021/4 Principal Supervisor	Mahdi Ait Lhaj Loutfi (Completed) , Université de Sherbrooke Student Degree Start Date: 2021/1 Student Degree Received Date: 2021/4 Thesis/Project Title: [end-of-study research project] Developer of MEDomicsLab: open-source computation platform for integrative data modeling in oncology Present Position: Master student, Université de Sherbrooke
2020/11 - 2021/6 Principal Supervisor	Mehdi Mitiche (Completed) , Université de Sherbrooke Student Degree Start Date: 2020/11 Student Degree Received Date: 2021/6 Thesis/Project Title: [international internship] Multi-omics modeling for predicting childhood cancer relapse Present Position: Undergraduate student, Université de Sherbrooke

2020/9 - 2020/12
Principal Supervisor
Robin Mailhot (Completed) , Université de Sherbrooke
Student Degree Start Date: 2020/9
Student Degree Received Date: 2020/12
Thesis/Project Title: [internship] Developer of MEDomicsLab: open-source computation platform for integrative data modeling in oncology
Present Position: Undergraduate student, Université de Sherbrooke

2020/5 - 2020/8
Principal Supervisor
Fabio Provencher-Flores (Completed) , Université de Sherbrooke
Student Degree Start Date: 2020/5
Student Degree Received Date: 2020/8
Thesis/Project Title: [internship] Distributed learning research in medicine
Present Position: Undergraduate student, University of Sherbrooke

2020/5 - 2020/8
Principal Supervisor
François Marcoux (Completed) , Université de Sherbrooke
Student Degree Start Date: 2020/5
Student Degree Received Date: 2020/8
Thesis/Project Title: [internship] Distributed learning research in medicine
Present Position: Undergraduate student, University of Sherbrooke

2020/5 - 2020/8
Principal Supervisor
Charles Lévesque-Matte (Completed) , University de Sherbrooke
Student Degree Start Date: 2020/5
Student Degree Received Date: 2020/8
Thesis/Project Title: [internship] Developer of MEDomicsLab: open-source computation platform for integrative data modeling in oncology
Present Position: Undergraduate student, University of Sherbrooke

Master's Thesis [n=8]

2022/5
Principal Supervisor
Andréanne Allaire (In Progress) , Université de Sherbrooke
Student Degree Start Date: 2022/5
Thesis/Project Title: Systematic evaluation of robustness and exploitation of radiomic features in magnetic resonance imaging
Present Position: Master student, Université de Sherbrooke

2021/9
Principal Supervisor
Mahdi Ait Lhaj Loufti (In Progress) , Université de Sherbrooke
Student Degree Start Date: 2021/9
Thesis/Project Title: A systematic evaluation of prediction performance potential for medical image-based analyses of increasing complexity in precision oncology
Present Position: Master student, Université de Sherbrooke

2021/5
Principal Supervisor
Olivier Lefebvre (In Progress) , Université de Sherbrooke
Student Degree Start Date: 2021/5
Thesis/Project Title: Systematic evaluation of the impact of distributed optimization with differential privacy in a federated learning context
Present Position: Master student, Université de Sherbrooke

2021/5
Co-Supervisor
Ranjan Yadav (In Progress) , McGill University
Student Degree Start Date: 2020/9
Thesis/Project Title: CBCT image-based tumor size quantification and radiomics analysis of early tissue changes after radiotherapy in an orthotopic lung cancer mouse model
Present Position: Master student, McGill University

2021/5
Co-Supervisor
Maxence Larose (In Progress) , Université Laval
Student Degree Start Date: 2020/9
Thesis/Project Title: Resilient prediction model based on quantitative imaging for prostate cancer
Present Position: Master student, Université Laval

2020/9 Principal Supervisor	Simon Giard-Leroux (In Progress) , Université de Sherbrooke Student Degree Start Date: 2020/9 Thesis/Project Title: Region-based convolutional neural networks for object identification in electrical power engineering Present Position: Master student, Université de Sherbrooke
2020/5 Principal Supervisor	Nicolas Raymond (In Progress) , Université de Sherbrooke Student Degree Start Date: 2020/5 Thesis/Project Title: Multi-omics modeling for predicting childhood cancer relapse Present Position: Master student, Université de Sherbrooke
2020/1 Principal Supervisor	Alexandre Ayotte (In Progress) , Université de Sherbrooke Student Degree Start Date: 2020/1 Thesis/Project Title: Medical image analysis and multi-task learning for decision support in renal lesions Present Position: Master student, Université de Sherbrooke

Staff Supervision

Number of Scientific and Technical Staff: 2

Event Administration

2019/9 - 2020/10	Program committee member, World Molecular Imaging Congress (WMIC), Conference, 2020/10 - 2020/10

Journal Review Activities

2021/2	Associate Editor,Medical Physics Number of Works Reviewed / Refereed: 2
2021/2	Reviewer,IEEE Transactions on Radiation and Plasma Medical Sciences Number of Works Reviewed / Refereed: 1
2020/6	Reviewer,PLOS ONE Number of Works Reviewed / Refereed: 1
2019/2	Reviewer,European Journal of Nuclear Medicine and Molecular Imaging Number of Works Reviewed / Refereed: 1
2018/4	Reviewer,Computerized Medical Imaging and Graphics Number of Works Reviewed / Refereed: 1
2018/1	Reviewer,International Journal of Radiation Oncology*Biology*Physics Number of Works Reviewed / Refereed: 2
2017/7	Reviewer,Radiotherapy and Oncology Number of Works Reviewed / Refereed: 5
2016/7	Reviewer,Ultrasound in Medicine and Biology Number of Works Reviewed / Refereed: 1
2014/10	Reviewer,Medical Physics Number of Works Reviewed / Refereed: 9

Conference Review Activities

2020/9	Reviewer, Medical Image Computing and Computer Assisted Intervention (MICCAI) 2020, Blind Number of Works Reviewed / Refereed: 2
2019/3	Reviewer, The International Conference on the Use of Computers in Radiation Therapy (ICCR 2019), Blind Number of Works Reviewed / Refereed: 17

Graduate Examination Activities

2022/7	Thesis Defense Chair, Guillaume Theaud, Computer Science, Université de Sherbrooke
2022/5	PhD Oral Exam Chair, Wend Yam Donald Davy Ouedraogo, Computer Science, Université de Sherbrooke
2022/4	PhD Oral Exam Member, Hassan Mostafa Ahmed Fahmy, Computer Science, Université de Sherbrooke
2022/3	PhD Comprehensive Exam Committee Member, Yassine Hammadi, Electrical and Computer Engineering, Université de Sherbrooke
2022/3	PhD Comprehensive Exam Committee Member, Alex Valcourt Caron, Computer Science, Université de Sherbrooke
2022/1	PhD Comprehensive Exam Committee Member, DJeff Kanda Nkashama, Computer Science, Université de Sherbrooke
2021/8	PhD Oral Exam Member, Emmanuelle Renaud, Computer Science, Université de Sherbrooke
2021/8	PhD Comprehensive Exam Committee Member, Hassan Mostafa Ahmed Fahmy, Computer Science, Université de Sherbrooke
2021/7	PhD Comprehensive Exam Committee Member, Wend Yam Donald Davy Ouedraogo, Computer Science, Université de Sherbrooke
2021/3	Thesis Defense Chair, Antoine Théberge, Computer Science, Université de Sherbrooke
2021/1	Thesis Defense Chair, Ryeyan Taseen, Computer Science, Université de Sherbrooke
2020/12	Thesis Defense Chair, Etienne St-Onge, Computer Science, Université de Sherbrooke
2020/5	PhD Oral Exam Chair, Jon Legaretta, Computer Science, Université de Sherbrooke
2020/5	Thesis Defense Examiner, Ximeng Mao, Medical Physics Unit, McGill University
2019/1 - 2021/12	Committee Member, Ludivine Morvan, Ecole Centrale de Nantes

Research Funding Application Assessment Activities

2022/1	External Reviewer, Discovery Grants, Funder, Academic Reviewer, Natural Sciences and Engineering Research Council of Canada (NSERC) Number of Applications Assessed: 1
2021/4	External Reviewer, Fonds des leaders John-R.-Evans, Funder, Academic Reviewer, Fonds de recherche du Québec - Santé (FRQS) Number of Applications Assessed: 2

Organizational Review Activities

2022/4 - 2022/4 — Jury - 100 days of Data.Trek challenge, IVADO
The 100 days of Data.Trek challenge is a 100-day training course designed to introduce students and research professionals to data manipulation, computational analysis, and machine learning from real data sets in a fun and mutual-help context.

Event Participation

2021/4 - 2021/4 — Round Table Invited Panelist, 2021 Summer school on deep learning for medical imaging, Workshop

International Collaboration Activities

2018/8 - 2025/3 — Co-leader, MEDomics consortium, United States
The *MEDomics* consortium (https://www.medomics.ai/) was officially launched in August 2018, and is currently composed of 12 scientists from six institutions: (i) Interdisciplinary Research Group in Health Informatics (GRIIS) of Université de Sherbrooke (UdeS), Canada; (ii) University California San Francisco (UCSF), USA; (iii) Princess Margaret Cancer Centre in Toronto, Canada; (iv) Department of Precision Medicine, Maastricht University, Netherlands; (v) Oncoray Research Group in Dresden, Germany; and (vi) CHU de Québec Research Centre, Québec, Canada. *This consortium is co-led by myself (UdeS) and Olivier Morin (UCSF)*, and is currently expanding. Overall, the main motivation of this consortium is to develop an end-to-end, open-source computation platform for integrative data modeling in medicine: *MEDomicsLab*. We envision that *MEDomics* will continue to produce high-impact scientific contributions to the field of *AI for precision medicine .*

2016/9 - 2025/3 — Co-leader, Image Biomarker Standardisation Initiative (IBSI), Germany
The image biomarker standardisation initiative (IBSI, https://theibsi.github.io/) is an independent international collaboration which works towards standardising the extraction of image biomarkers from acquired imaging for the purpose of high-throughput quantitative image analysis (radiomics). This initiative was launched by Alex Zwanenburg (Germany) and Martin Vallières (Sherbrooke) in September 2016. Lack of reproducibility and validation of high-throughput quantitative image analysis studies is considered to be a major challenge for the field. Part of this challenge lies in the scantiness of consensus-based guidelines and definitions for the process of translating acquired imaging into high-throughput image biomarkers. The IBSI therefore seeks to provide image biomarker nomenclature and definitions, benchmark data sets, and benchmark values to verify image processing and image biomarker calculations, as well as reporting guidelines, for high-throughput image analysis.

Committee Memberships

2022/6 — Committee Member, Comité de gestion du département d'informatique, Université de Sherbrooke

2022/5 — Committee Member, Comité permanent de développement stratégique du département d'informatique, Université de Sherbrooke

2020/11 - 2024/9	Committee Member, EuCanImage: External Advisory Board, European Association for Cancer Research A new large-scale international project funded by the European Commission to build a secure and federated imaging platform for next-generation artificial intelligence in oncology.
2022/5 - 2022/6	Committee Member, Comité d'urgence de développement stratégique du département d'informatique, Université de Sherbrooke

Other Memberships

2021/11	Scientific Director, PREVALIS (Université de Sherbrooke) https://prevalis.recherche.usherbrooke.ca/

Most Significant Contributions

2021/7	Morin M, Vallières M, et al. An artificial intelligence framework integrating longitudinal electronic health records with real-world data enables continuous pan-cancer prognostication. Nature Cancer, 2(7), 709-722 (2021) This research paper (second author) is the first one produced by the MEDomics consortium. In this work, we reported results on a longitudinal approach using natural language processing of unstructured medical notes, and we demonstrated its ability to update and improve a prognostic model over time. We also established the foundations of an open-source computation platform from which both clinical staff and research scientists can tackle a diverse range of oncological problems using artificial intelligence (MEDomicsLab). With my colleague Olivier Morin (first author), I was involved in all the methodological developments of this study.
2015/6	Vallières M, et al. A radiomics model from joint FDG-PET and MRI texture features for the prediction of lung metastases in soft-tissue sarcomas of the extremities. Physics in Medicine and Biology, 60(14), 5471-5496 (2015) In this research paper (first author), I developed a method that I named "texture optimization" for radiomics analysis. I also developed a complete machine learning workflow to integrate these optimized radiomic features with clinical information into prediction models. I believe that many research groups are now using texture optimization in their radiomic computation workflow. As indicated in my CCV, this paper was awarded the Roblat medal 2018 by the Physics in Medicine and Biology journal to recognize the paper with the most citations over the past five years, as well as the Michael S. Patterson Publication Impact Prize 2021 by the Canadian Organization of Medical Physicists (COMP) to recognize a paper that has had a "tremendous impact on the field of medical physics".
2020/1	Zwanenburg A*, Vallières M*, et al. The Image Biomarker Standardization Initiative: standardized quantitative radiomics for high-throughput image-based phenotyping. Radiology, 295(2), 328-338 (2020) Radiomic studies still suffer from severe reproducibility issues that prevent the routine use of these methods in clinical practice. To overcome these issues, about 60+ researchers from 25 institutions in 8 countries have now participated to the Image Biomarker Standardization Initiative (IBSI). This paper (co-first author) was a tremendous "tour-de-force", with 60+ co-authors, and it is notably linked to a reference manual currently published on arXiv: https://arxiv.org/abs/1612.07003. The content of this exhaustive report of 178 pages is currently being established internationally as the standardized framework of reference for radiomic computations.

Presentations

1. (2022). L'intelligence artificielle dans la lutte contre le cancer. Les grandes découvertes de l'UdeS - BistroBrain, Canada
   Main Audience: General Public
   Invited?: Yes
2. (2022). MEDomics : synergie entre analyse d'images médicales, apprentissage automatique, apprentissage profond, traitement automatique du langage et apprentissage fédéré. Midi-conférences DMIG, Université du Québec à Rimouski (UQAR), Canada
   Invited?: Yes
3. (2022). MEDomicsLab: Integrative data modeling in oncology. Event: International Conference on Radiation Medicine. Session: Artificial Intelligence in Radiation Medicine, Riyadh, Saudi Arabia
   Invited?: Yes
4. (2021). MEDomics: synergie entre analyse d'images médicales, apprentissage automatique, apprentissage profond, traitement automatique des langues naturelles et apprentissage distribué. Conférence Denis-LeBel et Kaféfak de la Faculté de sciences de l'Université de Sherbrooke, Sherbrooke, Canada
   Main Audience: Researcher
   Invited?: Yes
5. (2021). Radiomics: the Image Biomarker Standardisation Initiative (IBSI). RMP Radiomics Symposium, Toronto, Canada
   Main Audience: Researcher
   Invited?: Yes
6. (2021). MEDomics: synergie entre analyse d'images médicales, apprentissage automatique, apprentissage profond, traitement automatique des langues naturelles et apprentissage distribué. Séminaire de l'Université de Sherbrooke - Thème fédérateur Santé: Promotion, prévention et approches de précision, Sherbrooke, Canada
   Main Audience: Researcher
   Invited?: Yes
7. (2021). Development of a computation platform for integrative data modeling in oncology. Mila TechAIDE – AI conference, Montreal, Canada
   Main Audience: Researcher
   Invited?: Yes
8. (2021). Radiomics Analysis Using The Image Biomarker Standardization Initiative (IBSI): Benchmarks And Guidelines. 107th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, United States
   Main Audience: Researcher, Competitive?: Yes
9. (2021). MEDomics: integrative data modeling in oncology. Medical image analysis and deep learning in Python (McMedHacks), Montréal, Canada
   Main Audience: Researcher
   Invited?: Yes
10. (2020). MEDomicsLab: Integrative data modeling in oncology. 23rd International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2020) / Session: Tools, Software, Data Commons and Architectures for Fusion of Imaging and non-Imaging Data., Lima, Peru
    Main Audience: Researcher
    Invited?: Yes

11. (2020). Radiomics: the Image Biomarker Standardisation Initiative (IBSI). 23rd International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2020) / Session: 3D Head and Neck Tumor Segmentation in PET/CT, Lima, Peru
Main Audience: Researcher
Invited?: Yes, Keynote?: Yes

12. (2020). MEDomics : synergie entre analyse d'images médicales, apprentissage automatique, apprentissage profond, traitement automatique du langage et apprentissage distribué. Séminaire du Centre de Recherche du Centre Hospitalier Universitaire de Sherbrooke (CRCHUS), Sherbrooke, Canada
Main Audience: Researcher
Invited?: Yes

13. (2019). Oral Presentation: "MEDomicsLab: an open-source computation platform for integrative data modeling in medicine". Practical Big Data Workshop 2019 (PBDW 2019), Ann Harbor, United States
Main Audience: Researcher

14. (2019). Educational Lecture: "Radiomics: the Image Biomarker Standardisation Initiative (IBSI)". The International Conference on the Use of Computers in Radiation Therapy (ICCR 2019), Montreal, Canada
Main Audience: Researcher
Invited?: Yes

15. (2019). Educational Lecture: "Radiomics: the Image Biomarker Standardisation Initiative (IBSI)". 3rd ESTRO Physics Workshop – Science in development. Session: Multi-source data fusion for decision support systems in radiation oncology: opportunities, methodologies, standardization and clinical translation, Budapest, Hungary
Main Audience: Researcher
Invited?: Yes

16. (2019). MEDomics: synergie entre analyse d'images médicales, apprentissage automatique, apprentissage profond, traitement automatique des langues naturelles et apprentissage distribué. Séminaire du département de médecine nucléaire et de radiobiologie du Centre Hospitalier Universitaire de Sherbrooke (CHUS), Sherbrooke, Canada
Main Audience: Researcher
Invited?: Yes

17. (2019). Oral Presentation: "Radiomics: the Image Biomarker Standardisation Initiative (IBSI)". Seminar of the Stanford Center for Biomedical Informatics Research, Palo Alto, United States
Main Audience: Researcher
Invited?: Yes

18. (2018). Educational Lecture: "Radiomics: the Image Biomarker Standardisation Initiative (IBSI)". Big Data 4 Imaging 2018 Workshop, Masstricht, Netherlands
Main Audience: Researcher
Invited?: Yes

19. (2018). Educational Lecture: "Introduction to convolutional neural networks (CNNs)". Big Data 4 Imaging 2018 Workshop, Maastricht, Netherlands
Main Audience: Researcher
Invited?: Yes

20. (2018). Oral Presentation: "Investigating the complementarity of radiomics and clinical information for predicting treatment failure in multiple cancer types". American Association of Physicists in Medicine (AAPM) 60th Annual Meeting, Nashville, United States
Main Audience: Researcher, Competitive?: Yes

21. (2018). Educational Lecture: "Radiomics in MRI: Getting started". Joint annual meeting ISMRM-ESMRMB 2018, Paris, France
Main Audience: Researcher
Invited?: Yes

22. (2017). Oral Presentation: "Radiomics: Enabling Factors Towards Precision Medicine". RMP Radiomics Symposium Princess Magaret Hospital (PMH), Toronto, Canada
Main Audience: Researcher
Invited?: Yes

23. (2017). Oral Presentation: "Enhancement of multimodality texture-based prediction models via optimization of PET and MR image acquisition protocols: a proof of concept". Congrès National d'Imagerie du Vivant (CNIV) 2017, Paris, France
Main Audience: Researcher, Competitive?: Yes

24. (2017). Oral Presentation: "IBSI: Current status and beyond". Radiomics Retreat 2017, Clearwater, FL, United States
Main Audience: Researcher

25. (2016). Oral Presentation: "Analyse texturale pour l'évaluation de l'agressivité des tumeurs". Séminaire du département de radiothérapie du Centre hospitalier de l'Université de Montréal (CHUM), Montréal, Canada
Main Audience: Researcher
Invited?: Yes

26. (2016). Oral Presentation: "Assessing the risk of tumour recurrences and metastases in head and neck cancer by combining radiomics and clinical variables via imbalance-adjusted machine learning". Radiomics Retreat 2016, Clearwater, FL, United States
Main Audience: Researcher

27. (2015). Oral Presentation: "Statistical methods for the construction of texture-based prediction models". Radiomics Retreat 2015, Clearwater, FL, United States
Main Audience: Researcher

28. (2015). Oral Presentation: "Radiomics: Mais Ou Et Donc Car Ni Or (who, what, when, where, when)?". Medical Physics Research Training Network (MPRTN) CREATE: Rising Stars in Medical Physics, Montréal, Canada
Main Audience: Researcher
Invited?: Yes

29. (2012). Oral Presentation: "Prediction of tumour outcomes by wavelet image fusion and texture analysis". Seminar of the Montreal Neurological Institute (MNI), Montréal, Canada
Main Audience: Researcher
Invited?: Yes

30. (2012). Oral Presentation: "PET/MR imaging for prediction of tumor outcomes by wavelet image fusion and texture analysis". PET/MR and SPECT/MR: New Paradigms for Combined Modalities in Molecular Imaging Conference (PSMR2012), La Biodola, Elba Island, Italy
Main Audience: Researcher, Competitive?: Yes

Broadcast Interviews

2021/10/25 - 2021/10/25	L'intelligence artificielle pour évaluer les pronostics en cancérologie, Les années lumière, Radio-Canada https://bit.ly/3yLKkqL

Text Interviews

2021/10/15	L'intelligence artificielle rend les cancers plus prévisibles, Journal la Tribune https://bit.ly/3P8jEXq

2021/10/13 Les médecins pourront donner des pronostics de cancer plus précis grâce à l'intelligence artificielle, Nouvelles, Université de Sherbrooke
https://www.usherbrooke.ca/actualites/nouvelles/sante/details/46119

Publications

Journal Articles

1. Oreiller V, Andrearczyk V, Jreige M, Boughdad S, Elhalawani H, Castelli J, Vallières M, Zhu S, Xie J, Peng Y, Iantsen A, Hatt M, Yuan Y, Ma J, Yang X, Rao C, Pai S, Ghimire K, Feng X, Naser MA, Fuller CD, Yousefirizi F, Rahmim A, Chen H, Wang L, Prior JO, and Depeursinge A. (2022). Head and Neck Tumor Segmentation in PET/CT: The HECKTOR Challenge. Medical Image Analysis. 77: 102336.
Published,
Refereed?: Yes

2. George E, Flagg E, Chang K, Bai HX, Aerts HJ, Vallières M, Reardon DA, and Huang RY. (2022). Radiomics-Based Machine Learning for Outcome Prediction in a Multicenter Phase II Study of Programmed Death-Ligand 1 Inhibition Immunotherapy for Glioblastoma. American Journal of Neuroradiology. 43(5): 675-681.
Published,
Refereed?: Yes

3. Keek SA, Beuque M, Primakov S, Woodruff HC, Chatterjee A, van Timmeren JE, Vallières M, Hendriks LEL, Kraft J, Andratschke N, Braunstein SE, Morin O, and Lambin P. (2022). Predicting Adverse Radiation Effects in Brain Tumors After Stereotactic Radiotherapy With Deep Learning and Handcrafted Radiomics. Frontiers in Oncology. 12: 920393.
Published,
Refereed?: Yes

4. Pati S, Baid U, Edwards B, et al. (2022). Federated Learning Enables Big Data for Rare Cancer Boundary Detection. arXiv. arXiv:2204.10836
Published,
Refereed?: No
Number of Contributors: 279

5. Fontaine P, Andrearczyk V, Oreiller V, Abler D, Castelli J, Acosta O, De Crevoisier R, Vallières M, Jreige M, Prior JO, and Depeursinge A. (2022). Cleaning Radiotherapy Contours for Radiomics Studies, is it Worth it? A Head and Neck Cancer Study. Clinical and Translational Radiation Oncology. 33: 153-158.
Published,
Refereed?: Yes

6. Ginart JB, Ziemer BP, Nano T, Turgutlu KC, Ibrahim A, Interian Y, Dalal A, Sandor R, Leseur J, Vallières M, Upadhaya T, Braunstein S, Valdes G, McDermott M, Villanueva-Meyer J, and Morin O. (2021). Multi-Modal Brain and Ventricle Segmentation Using Weakly Supervised Transfer Learning. J Radiol Med Imaging. 4(1): 1052.
Published,
Refereed?: Yes

7. Purkayastha S, Xiao Y, Jiao Z, Thepumnoeysuk R, Halsey K, Linh Tran TM, Choi JW, Wang D, Vallières M, Wang R, Collins S, Feng X, Feldman M, Zhang PJ, Atalay M, Sebro R, Yang L, Fan Y, Liao W-H, and Bai HX. (2021). Machine learning-based prediction of COVID-19 severity and progression to critical illness using CT imaging and clinical data. Korean Journal of Radiology. 22(7): 1213-1224.
Published,
Refereed?: Yes

8. DeCunha J, Villegas F, Vallières M, Torres J, Camilleri-Broët S, and Enger S. (2021). Patient-specific microdosimetry: a proof of concept. Physics in Medicine and Biology. 66(18): 185011.
Published,
Refereed?: Yes

9. Morin M, Vallières M, Braunstein S, Ginart JB, Upadhaya T, Woodruff HC, Zwanenburg A, Chatterjee A, Villanueva-Mayer JE, Valdes G, Chen W, Hong JC, Yom SS, Solberg TD, Löck S, Seuntjens J, Park C, and Lambin P. (2021). An artificial intelligence framework integrating longitudinal electronic health records with real-world data enables continuous pan-cancer prognostication. Nature Cancer. 2(7): 709-722.
Published,
Refereed?: Yes

10. Cong H, Peng W, Tian Z, Vallières M, Chuanpei X, Aijun Z, and Benxin Z. (2021). FDG-PET/CT Radiomics Models for The Early Prediction of Locoregional Recurrence in Head and Neck Cancer. Current Medical Imaging. 17(3): 374-383.
Published,
Refereed?: Yes

11. Decunha J, Poole CM, Vallières M, Torres J, Camilleri-Broët S, Rayes RF, Spicer JD, Enger SA. (2021). Development of patient specific 3D models from histopathological samples for microdosimetric investigations in radiation therapy. Physica Medica. 81: 162-169.
Published,
Refereed?: Yes

12. Chatterjee A, Vallières M, Forghani R, and Seuntjens J. (2021). Investigating the impact of the CT Hounsfield unit range on radiomic feature stability using dual energy CT data. Physica Medica. 88: 272-277.
Published,
Refereed?: Yes

13. Chatterjee A, Vallières M, and Seuntjens J. (2020). Overlooked pitfalls in multi-class classification and how to avoid them. Physica Medica: European Journal of Medical Physics. 79: 96-100.
Published,
Refereed?: Yes

14. Bourbonne V, Fournier G, Vallières M, Lucia F, Doucet L, Tissot V, Cuvelier G, Hue S, Le Penn Du H, Perdriel L, Bertrand N, Staroz F, Visvikis D, Pradier O, Hatt M, Schick U. (2020). External validation of an MRI-derived radiomics model to predict biochemical recurrence after surgery for high-risk prostate cancer.Cancers. 12(4): 814.
Published,
Refereed?: Yes

15. Xi IL, Zhao Y, Wang R, Chang M, Purkayastha S, Chang K, Huang R, Silva A, Vallières M, Habibollahi P, Fan Y, Zou B, Gade T, Zhang P, Soulen M, Zhang Z, Bai H, and Stavropoulos S. (2020). Deep learning to distinguish benign from malignant renal lesions based on routine MR imaging. Clinical Cancer Research. 26(8): 1944-1952.
Published,
Refereed?: Yes

16. Zwanenburg A*, Vallières M*, Abdalah MA, Aerts HJWL, Andrearczyk V, Apte A, Ashrafinia S, Bakas S, Beukinga RJ, Boellaard R, Bogowicz M, Boldrini L, Buvat I, Cook GJR, Davatzikos C, Depeursinge A, Desseroit M-C, Dinapoli N, Viet Dinh C, Echegaray S, El Naqa I, Fedorov AY, Gatta R, Gillies RJ, Goh V, Guckenberger M, Götz, Ha SM, Hatt M, Isensee F, Lambin P, Leger S, Leijenaar RTH, Lenkowicz J, Lippert F, Losnegård A, Maier-Hein KH, Morin O, Müller H, Napel S, Nioche C, Orlhac F, Pati S, Pfaehler EAG, Rahmim A, Rao AUK, Scherer J, Siddique MM, Sijtsema NM, Fernandez JS, Spezi E, Steenbakkers RJHM, Tanadini-Lang S, Thorwarth D, Troost EGC, Upadhaya T, Valentini V, van Dijk LV, van Griethuysen J, van Velden FHP, Whybra P, Richter C*, and Löck S*. (2020). The Image Biomarker Standardization Initiative: standardized quantitative radiomics for high-throughput image-based phenotyping. Radiology. 295(2): 328-338.
Published,
Refereed?: Yes

17. Xi IL, Zhao Y, Wang R, Chang M, Purkayastha S, Chang K, Huang RY, Silva AC, Vallières M, Habibollahi P, Fan Y, Zou B, Gade TP, Zhang PJ, Soulen MC, Zhang Z, Bai HX, and Stavropoulos SW. (2020). Deep learning based on MR imaging for differentiation of low and high grade in low stage renal cell carcinoma. Journal of Magnetic Resonance Imaging. 52(5): 1542-1549.
Published,
Refereed?: Yes

18. Depeursinge A, Andrearczyk V, Whybra P, van Griethuysen J, Müller H, Schaer R, Vallières M, and Zwanenburg A. (2020). Standardised convolutional filtering for radiomics. arXiv. arXiv:2006.05470
Published,
Refereed?: No

19. Avanzo M, Wei L, Stancanello J, Vallières M, Rao A, Morin O, Mattonen S, El Naqa I. (2020). Machine and deep learning methods for radiomics. Medical Physics. 47(5): e185-e202.
Published,
Refereed?: Yes

20. Ibrahim A, Vallières M, Woodruff H, Primakov S, Beheshti M, Keek S, Refaee T, Sanduleanu S, Walsh S, Morin O, Lambin P, Hustinx R, Mottaghy FM. (2019). Radiomics analysis for clinical decision support in nuclear medicine. Seminars in Nuclear Medicine. 49(5): 438-449.
Published,
Refereed?: Yes

21. Upadhaya T, Vallières M, Chatterjee A, Lucia F, Bonaffini PA, Masson I, Mervoyer A, Reinhold C, Schick U, Seuntjens J, Cheze Le Rest C, Visvikis D, Hatt M. (2019). Comparison of radiomics models built through machine learning in a multicentric context with independent testing: identical data, similar algorithms, different methodologies. IEEE Transactions on Radiation and Plasma Medical Sciences. 3(2): 192-200.
Published,
Refereed?: Yes

22. Wei L, Rosen B, Vallières M, Chotchutipan T, Mierzwa M, Eisbruch A, El Naqa I. (2019). Automatic recognition of streak artifacts in head and neck CT region of interest using gradient-based features and impact of streak artifacts for radiomic analysis. Physics and Imaging in Radiation Oncology. 10: 49-54.
Published,
Refereed?: Yes

23. Nair JKR, Vallières M, Mascarella MA, El Sabbagh N, Duchatellier CF, Zeitouni A, Shenouda G, and Chankowsky J. (2019). Magnetic resonance imaging texture analysis predicts recurrence in patients with nasopharyngeal carcinoma. Canadian Association of Radiologists Journal. 70(4): 394-402.
Published,
Refereed?: Yes

24. Morin O, Chen WC, Nassiri F, Susko M, Magill ST, Vasudevan HN, Wu A, Vallières M, Gennatas ED, Valdes G, Pekmezci M, Alcaide-Leon P, Choudhury A, Interian Y, Mortezavi S, Turgutlu K, Bush NAO, Solberg TD, Braunstein SE, Sneed PK, Perry A, Zadeh G, McDermott MW, Villanueva-Meyer JE, and Raleigh DR. (2019). Integrated models incorporating radiologic and radiomic features predict meningioma grade, local failure, and overall survival. Neuro-Oncology Advances. 1(1): 1-5.
Published,
Refereed?: Yes

25. Diamant A, Chatterjee A, Vallières M, Shenouda G, Seuntjens J. (2019). Deep learning in head & neck cancer outcome prediction. Scientific Reports. 9: 2764.
Published,
Refereed?: Yes

26. Lucia F, Visvikis D, Vallières M, Desseroit M-C, Miranda O, Robin P, Bonaffini PA, Alfieri J, Masson I, Mervoyer A, Reinhold C, Pradier O, Hatt M, Schick U. (2019). External validation of a combined PET and MRI radiomics model for prediction of recurrence in cervical cancer patients treated with chemotherapy. European Journal of Nuclear Medicine and Molecular. 46(4): 864-867.
Published,
Refereed?: Yes

27. Chatterjee A, Vallières M, Dohan A, Levesque IR, Ueno Y, Bist V, Saif S, Reinhold C, Seuntjens J. (2019). An empirical approach for avoiding false discoveries when applying high-dimensional radiomics to small datasets. IEEE Transactions on Radiation and Plasma Medical Sciences. 3(2): 201-209.
Published,
Refereed?: Yes

28. Zhou H, Chang K, Bai HX, Xiao B, Su C, Bi WL, Zhang PJ, Senders JT, Vallières M, Kavouridis VK, Boaro A, Arnaout O, Yang L, Huang RY. (2019). Machine learning reveals multimodal MRI patterns predictive of isocitrate dehydrogenase and 1p/19q status in diffuse low- and high-grade gliomas. Journal of Neuro-Oncology. 142(2): 299-307.
Published,
Refereed?: Yes

29. Bourbonne V, Vallières M, Lucia F, Doucet L, Visvikis D, Tissot V, Pradier O, Hatt M, and Schick U. (2019). MRI-derived radiomics to guide post-operative management for high-risk prostate cancer. Frontiers in Oncology. 9: 807.
Published,
Refereed?: Yes

30. Chatterjee A, Vallières M, Dohan A, Levesque IR, Ueno Y, Bist V, Saif S, Reinhold C, Seuntjens J. (2019). Creating robust predictive radiomic models for data from independent institutions using normalization. IEEE Transactions on Radiation and Plasma Medical Sciences. 3(2): 210-215.
Published,
Refereed?: Yes

31. Vallières M, Serban M, Benzyane I, Ahmed Z, Xing S, El Naqa I, Levesque IR, Seuntjens J, Freeman CR. (2018). Investigating the role of functional imaging in the management of soft-tissue sarcomas of the extremities. Physics and Imaging in Radiation Oncology. 6: 53-60.
Published,
Refereed?: Yes

32. Morin O, Vallières M, Jochems A, Woodruff HC, Valdes G, Braunstein SE, Wildberger JE, Villanueva-Meyer JE, Kearney V, Yom SS, Solberg TD, Lambin P. (2018). A deep look into the future of quantitative imaging in oncology: a statement of working principles and proposal for change. International Journal of Radiation Oncology • Biology • Physics. 102(4): 1074-1082.
Published,
Refereed?: Yes

33. Vallières M, Zwanenburg A, Badic B, Cheze Le Rest C, Visvikis D, Hatt M. (2018). Responsible radiomics research for faster clinical translation. Journal of Nuclear Medicine. 59(2): 189-193.
Published,
Refereed?: Yes

34. Vallières M, Laberge S, Diamant A, El Naqa I. (2017). Enhancement of multimodality texture-based prediction models via optimization of PET and MR image acquisition protocols: a proof of concept. Physics in Medicine and Biology. 62(22): 8536-8565.
Published,
Refereed?: Yes
Contribution Percentage: 81-90

35. Vallières M, Kay-Rivest E, Jean Perrin L, Liem X, Furstoss C, Aerts HJWL, Khaouam N, Nguyen-Tan PF, Wang C-S, Sultanem K, Seuntjens J, El Naqa I. (2017). Radiomics strategies for risk assessment of tumour failure in head-and-neck cancer. Scientific Reports. 7: 10117.
Published,
Refereed?: Yes

36. Zhou H, Vallières M, Bai HX, Su C, Tang H, Oldridge D, Zhang Z, Xiao B, Liao W, Tao Y, Zhou J, Zhang P, Yang L. (2017). MR imaging features predict survival and molecular markers in diffuse lower-grade gliomas. Neuro-Oncology. 19(6): 862-870.
Published,
Refereed?: Yes

37. Vallières M, Freeman CR, Skamene SR, El Naqa I. (2015). A radiomics model from joint FDG-PET and MRI texture features for the prediction of lung metastases in soft-tissue sarcomas of the extremities. Physics in Medicine and Biology. 60(14): 5471-5496.
Published,
Refereed?: Yes

38. Hatt M, Majdoub M, Vallières M, Tixier F, Cheze Le Rest C, GroheuxD, Hindié E, Martineau A, Pradier O, Hustinx R, Perdrisot R, Guillevin R, El Naqa I, Visvikis D. (2015). 18F-FDG PET uptake characterization through texture analysis: investigating the complementary nature of heterogeneity and functional tumor volume in a multi-cancer site patient cohort. Journal of Nuclear Medicine. 56(1): 38-44.
Published,
Refereed?: Yes

39. Rivard M, Laliberté M, Bertrand-Grenier A, Harnagea C, Pfeffer CP, Vallières M, St-Pierre Y, Pignolet A, Khakani MAE, Légaré F. (2011). The structural origin of second harmonic generation in fascia. Biomedical Optics Express. 2(1): 26-36.
Published,
Refereed?: Yes

40. Harnagea C, Vallières M, Pfeffer CP, Wu D, Olsen BR, Pignolet A, Légaré F, Gruverman A. (2010). Two-dimensional nanoscale structural and functional imaging in individual collagen type-I fibrils. Biophysical Journal. 98(12): 3070-3077.
Published,
Refereed?: Yes

41. Patskovsky S, Vallières M, Maisonneuve M, Song I-H, Meunier M, Kabashin AV. (2009). Designing efficient zero calibration point for phase-sensitive surface plasmon resonance biosensing. Optics Express. 17(4): 2255-2263.
Published,
Refereed?: Yes

Book Chapters

1. Nano T, Lafrenière M, Ziemer B, Witztum A, Barrios J, Upadhaya T, Vallières M, Interian Y, Valdes G, Morin O. (2020). Artificial Intelligence in Radiation Oncology. Jacob Van Dyk. The Modern Technology of Radiation Oncology. 4: 225-258.
   Co-Author
   Published, Medical Physics Publishing, United States
   Refereed?: No

Thesis/Dissertation

1. Radiomics: Enabling Factors Towards Precision Medicine. (2017). McGill University. Doctorate.
   Number of Pages: 278 Supervisor: Issam El Naqa and Jan Seuntjens
2. FDG-PET/MR Imaging for prediction of lung metastases in soft-tissue sarcomas of the extremities by texture analysis and wavelet image fusion. (2012). McGill University. Master's Thesis.
   Number of Pages: 130 Supervisor: Issam El Naqa

Supervised Student Publications

1. Maxence Larose
   Graph Attention Network for Prostate Cancer Lymph Node Invasion Prediction. Medical Imaging with Deep Learning. (2022).
   Published,

Conference Publications

1. Andrearczyk V, Oreiller V, Boughdad S, Cheze Le Rest C, Elhalawani H, Jreige M, Prior JO, Vallières M, Visvikis D, Hatt M, and Depeursinge A. (2022). Overview of the HECKTOR Challenge at MICCAI 2021: Automatic Head and Neck Tumor Segmentation and Outcome Prediction in PET/CT Images. Lecture Notes in Computer Science. 24th International Conference on Medical Image Computing & Computer Assisted Intervention (MICCAI 2021), (1-37),
   Paper
   Published
   Refereed?: Yes
2. Larose M, Touma N, Raymond N, LeBlanc D, Rasekh F, Neveu B, Hovington H, Vallières M, Pouliot P, and Archambault L. (2022). Graph Attention Network for Prostate Cancer Lymph Node Invasion Prediction. Medical Imaging with Deep Learning, ,
   Paper
   Published
   Refereed?: Yes
3. Andrearczyk V, Oreiller V, Jreige M, Vallières M, Castelli J, Elhalawani H, Boughdad S, Prior JO, Depeursinge A. (2021). Overview of the HECKTOR challenge at MICCAI 2020: automatic head and neck tumor segmentation in PET/CT. Lecture Notes in Computer Science. 23rd International Conference on Medical Image Computing & Computer Assisted Intervention (MICCAI 2020), Lima, Peru (1-21),
   Conference Date: 2020/10
   Paper
   Published
   Refereed?: Yes

4. Chatterjee A, Vallières M, Seuntjens J, and Forghani R. (2020). Advantages of Spectral Energy CT Data for Deep Learning Applications. Medical Physics. Sixty-second annual meeting of the American association of physicists in medicine, (E575-E575),
Abstract
Published
Refereed?: Yes

5. Traverso A, Vallières M, Van Soest J, Wee L, Morin O, and Dekker A. (2020). Publishing linked and FAIR radiomics data in radiation oncology via ontologies and Semantic Web. Radiotherapy and Oncology. European Society for Radiotherapy & Oncology (ESTRO) Annual Meeting, (S827-S827),
Abstract
Published
Refereed?: Yes

6. Andrearczyk V, Oreiller V, Vallières M, Castelli J, Elhalawani H, Boughdad S, Jreige M, Prior JO, and Depeursinge A. (2020). Automatic segmentation of head and neck tumors and nodal metastases in PET-CT scans. Proceedings of Machine Learning Research. Medical Imaging with Deep Learning (MIDL), Montreal, Canada (33-43),
Conference Date: 2020/7
Paper
Published
Refereed?: Yes

7. Chatterjee A, Vallières M, Dohan A, Levesque IR, Ueno Y, Saif S, Reinhold C, and Seuntjens J. (2019). Improved external validation performance of predictive radiomics models using statistical methods. Radiotherapy and Oncology. European Society for Radiotherapy & Oncology (ESTRO) Annual Meeting, (S513-S513),
Abstract
Published
Refereed?: Yes

8. Ferreira MDS, LOVINFOSSE P, DE CUYPERE M, Rovira R, Lucia F, Schick U, Vallières M, Bonaffini P, Reinhold C, Visvikis D, Hatt M, BERNARD C, Leijenaar R, Walsh S, KRIDELKA F, Meyer P, and HUSTINX R. (2019). FDG PET radiomics to predict disease free survival in Cervical Cancer. IEEE Nuclear Science Symposium & Medical Imaging Conference, ,
Abstract
Published
Refereed?: Yes

9. Chatterjee A, Vallières M, Dohan A, Levesque I, Ueno Y, Saif S, Reinhold C, and Seuntjens J. (2019). Using Dataset-Specific Feature Standardization to Improve Predictive Performance of Radiomic Models. Medical Physics. Sixty-first annual meeting of the American association of physicists in medicine, (E174-E174),
Abstract
Published
Refereed?: Yes

10. Chatterjee A, Vallières M, Romero-Sanchez G, Perez-Lara A, Forghani R, and Seuntjens J. (2019). Multi-Energy Study of Impact of CT Hounsfield Unit Range in Gray Level Discretization On Radiomic Feature Stability. Medical Physics. Sixty-first annual meeting of the American association of physicists in medicine, (E233-E233),
Abstract
Published
Refereed?: Yes

11. Da-ano R, Lucia F, Vallières M, Bonaffini P, Masson I, Mervoyer A, Reinhold C, Schick U, Visvikis D, and Hatt M. (2019). Harmonization strategies based on ComBat for mutlicentric radiomics studies. European Journal of Nuclear Medicine and Molecular Imaging. European Journal of Nuclear Medicine and Molecular Imaging, (S254-S254),
Abstract
Published
Refereed?: Yes

12. Diamant A, Chatterjee A, Vallières M, Shenouda G, and Seuntjens J. (2019). Multi-Branch Convolutional Neural Network Combines Unregistered PET and CT Images for Head & Neck Cancer Outcome Prediction. Medical Physics. Sixty-first annual meeting of the American association of physicists in medicine, (E294-E294),
Abstract
Published
Refereed?: Yes

13. Lucia F, Visvikis D, Vallières M, Desseroit M, Miranda O, Robin P, Bonaffini PA, Alfieri J, Masson I, Mervoyer A, Reinhold C, Pradier O, Hatt M, and Schick U. (2019). Validation of a combined PET and MRI radiomics model for prediction of recurrence in cervical cancer. Radiotherapy and Oncology. European Society for Radiotherapy & Oncology (ESTRO) Annual Meeting, (S800),
Abstract
Published
Refereed?: Yes

14. Ferreira MDS, LOVINFOSSE P, DE CUYPERE M, Rovira R, Lucia F, Schick U, Vallières M, Bonaffini P, Reinhold C, Visvikis D, Hatt M, BERNARD C, Leijenaar R, Walsh S, KRIDELKA F, Meyer P, and HUSTINX R. (2019). Radiomics for Disease Free Survival prediction using pre-treatment FDG PET images. Imaging of diagnostic and therapeutic biomarkers in Oncology, ,
Abstract
Published
Refereed?: Yes, Invited?: No

15. Bourbonne V, Vallières M, Lucia F, Doucet L, Visvikis D, Tissot V, Cuvelier G, Hue S, Prigent L, Bertrand N, Staroz F, Pradier O, Hatt M, and Schick U. (2019). Validation of an MRI-derived radiomics model to guide patients selection for adjuvant radiotherapy after prostatectomy for high-risk prostate cancer. International Journal of Radiation Oncology, Biology, Physics. American Society for Radiation Oncology (ASTRO) Annual Meeting, (E266-E267),
Abstract
Published
Refereed?: Yes, Invited?: No

16. Bourbonne V, Vallières M, Lucia F, Fournier G, Valéri A, Visvikis D, Tissot V, Pradier O, Hatt M, and Schick U. (2019). MRI-derived radiomics to select patients with high-risk prostate cancer for adjuvant radiotherapy. Radiotherapy and Oncology. European Society for Radiotherapy & Oncology (ESTRO) Annual Meeting, (S451-S452),
Abstract
Published
Refereed?: Yes

17. Diamant A, Chatterjee A, Vallières M, Shenouda G, and Seuntjens J. (2019). Multi-modal deep learning framework for head & neck cancer outcome prediction. Medical Physics. The Canadian Organization of Medical Physicists Conference, (5372-5372),
Abstract
Published
Refereed?: Yes

18. Traverso A, Vallières M, van Soest J, Wee L, Morin O, and Dekker A. (2019). Publishing Linked and FAIR-compliant Radiomics Data in Radiation Oncology via Ontologies and Semantic Web Techniques. Semantic Web Applications and Tools for Healthcare and Life Sciences, ,
Abstract
Published
Refereed?: Yes

19. Bourbonne V, Vallières M, Lucia F, Fournier G, Valéri A, Visvikis D, Pradier O, and Schick U. (2018). Valeur pronostique des paramètres de texture extraits des IRM préthérapeutiques chez les patients opérés d'un adénocarcinome prostatique à haut risque de récidive biochimique. Cancer/Radiothérapie. Cancer/Radiothérapie, (695-696),
Abstract
Published
Refereed?: Yes

20. Zwanenburg A, Abdalah A, Ashrafinia S, Beukinga J, Bogowicz M, Dinh CV, Götz M, Hatt M, Leijenaar R, Lenkowicz J, Morin O, Rao A, Fernandez JS, Vallières M, van Dijk LV, van Griethuysen J, van Velden FHP, Whybra P, Troost ECG, Richter C, and Löck S. (2018). Results from the image biomarker standardisation initiative. Radiotherapy and Oncology. European Society for Radiotherapy & Oncology (ESTRO) Annual Meeting, ,
Abstract
Published
Refereed?: Yes

21. Hatt M, Vallières M, Visvikis D, and Zwanenburg A. (2018). IBSI: an international community radiomics standardization initiative. Journal of Nuclear Medicine. Society of Nuclear Medicine and Molecular Imaging (SNMMI) 2018 Annual Meeting, (287-287),
Abstract
Published
Refereed?: Yes

22. Vallières M, Chatterjee A, Lucia F, Bourbonne V, Bonaffini P, Masson I, Mervoyers A, Reinhold C, Visvikis D, Schick U, Seuntjens J, Morin O, and Hatt M. (2018). Investigating the Complementarity of Radiomics and Clinical Information for Predicting Treatment Failure in Multiple Cancer Types. Medical Physics. Sixtieth annual meeting of the American association of physicists in medicine, (E679-E679),
Conference Date: 2018/7
Abstract
Published
Refereed?: Yes

23. Vallières M, Visvikis D, Hatt M. (2018). Dependency of a validated radiomics signature and potential corrections. Journal of Nuclear Medicine. Society of Nuclear Medicine and Molecular Imaging (SNMMI) 2018 Annual Meeting, (640),
Conference Date: 2018/6
Abstract
Published
Refereed?: Yes

24. Chatterjee A, Vallières M, Dohan A, Levesque I, Ueno Y, Bist V, Saif S, Reinhold C, and Seuntjens J. (2017). Novel methodology for applying radiomics to small datasets. Medical Physics. Fifty-ninth annual meeting of the American association of physicists in medicine, (4371-4371),
Abstract
Published
Refereed?: Yes

25. Chatterjee A, Vallières M, Dohan A, Levesque I, Ueno Y, Bist V, Saif S, Reinhold C, and Seuntjens J. (2017). Keys to Avoiding Statistical Pitfalls of Small Datasets in Radiomics. Medical Physics. Fifty-ninth annual meeting of the American association of physicists in medicine, (3114-3114),
Abstract
Published
Refereed?: Yes

26. Zhou H, Bai HX, Su C, Tang H, Vallières M, Huang X, Agbodza E, Awachie T, Tang X, Tao Y, Zhou J, Martinez-Lage M, Xiao B, Tan L, Zhang P, and Yang L. (2016). MR Imaging Features Predict Survival and Molecular Profile in Diffuse Lower Grade Gliomas. Annals of Neurology. Annals of Neurology, (S56-S56),
Abstract
Published
Refereed?: Yes

27. Vallières M, Freeman CR, Zaki A, Turcotte R, Hickeson M, Skamene S, Jeyaseelan K, Hathout L, Serban M, Xing S, Powell TI, Goulding K, Seuntjens S, Levesque IR, and El Naqa I. (2016). EARLY ASSESSMENT OF LUNG METASTASIS RISK IN SOFT-TISSUE SARCOMAS: PREDICTION OF PROSPECTIVE COHORT AND POTENTIAL IMPROVEMENT USING HYPOXIA AND PERFUSION BIOMARKERS. Orthopaedic Proceedings. The Canadian Orthopaedic Association (COA) Annual Meeting, (39-39),
Abstract
Published
Refereed?: Yes

28. Ybarra N, Vallières M, Jeyaseelan K, Freeman CR, Jung S, Turcotte R, Seuntjens J, and El Naqa I. (2016). Correlation of Molecular Imaging and Biomarkers Expression in the Prediction of Metastatic Capacity of Soft Tissue Sarcomas. International Journal of Radiation Oncology, Biology, Physics. American Society for Radiation Oncology (ASTRO) Annual Meeting, (E705-E706),
Abstract
Published
Refereed?: Yes

29. Vallières M, Freeman CR, Ahmed Z, Turcotte R, Hickeson M, Skamene S, Jeyaseelan K, Hathout L, Serban M, Xing S, Powell TI, Seuntjens J, Levesque IR, and El Naqa I. (2015). Early Assessment of Tumor Aggressiveness Using Joint FDG-PET/MRI Textural Features: Prediction of Prospective Cohort and Potential Improvement Using Hypoxia and Perfusion Biomarkers. International Journal of Radiation Oncology Biology Physics. American Society for Radiation Oncology (ASTRO) Annual Meeting, (S6),
Abstract
Published
Refereed?: Yes
Contribution Percentage: 81-90

30. Vallières M, Boustead A, Laberge S, Levesque IR, and El Naqa I. (2015). A Machine Learning Approach for Creating Texture-Preserved MRI Tumor Models From Clinical Sequences. Medical Physics. Fifty-seventh annual meeting of the American association of physicists in medicine, (3323-3324),
Abstract
Published
Refereed?: Yes

31. Vallières M, Laberge S, Levesque IR, and El Naqa I. (2014). Enhancement of Texture-Based Metastasis Prediction Models Via the Optimization of PET/MRI Acquisition Protocols. Medical Physics. Fifty-sixth annual meeting of the American association of physicists in medicine, (435-435),
Abstract
Published
Refereed?: Yes

32. Perez JR, Vallières M, Ybarra N, Maria O, Chagnon F, Lesur O, and El Naqa I. (2014). Fluorescence Endomicroscopy as a Tool to Assess Radiation-Induced Lung Damage, Protection, and Regeneration. International Journal of Radiation Oncology, Biology, Physics. American Society for Radiation Oncology (ASTRO) Annual Meeting, (S78),
Abstract
Published
Refereed?: Yes

33. Vallières M, Freeman CR, Skamene S, and El Naqa I. (2014). Early Assessment of Tumor Aggressiveness Using Joint FDG-PET/MR Textural Features. International Journal of Radiation Oncology, Biology, Physics. American Society for Radiation Oncology (ASTRO) Annual Meeting, (S6-S7),
Abstract
Published
Refereed?: Yes

34. Lee S, Ybarra N, Jeyaseelan K, Faria S, Kopek N, Vallières M, and El Naqa I. (2014). Association of Computed Tomography image textures with inflammatory biomarkers in radiation-induced lung injury. Radiotherapy and Oncology. European Society for Radiotherapy & Oncology (ESTRO) Annual Meeting, (S28),
Abstract
Published
Refereed?: Yes

35. Laberge S, Vallières M, Levesque IR,and El Naqa I. (2014). STAMP: Simulator for Texture Analysis in MRI/PET. Medical Physics. Fifty-sixth annual meeting of the American association of physicists in medicine, (122-122),
Abstract
Published
Refereed?: Yes

36. Pater P, Vallières M, and Seuntjens J. (2014). Hands-On Monte Carlo Project Assignment as a Method to Teach Radiation Physics. Medical Physics. Fifty-sixth annual meeting of the American association of physicists in medicine, (426-427),
Abstract
Published
Refereed?: Yes

37. Vallières M, Freeman CR, Skamene S, El Naqa I. (2014). Early assessment of tumor aggressiveness using joint FDG-PET/MR textural features. International Journal of Radiation Oncology Biology Physics. American Society for Radiation Oncology (ASTRO) 56th Annual Meeting, (S6-S7),
Conference Date: 2014/9
Abstract
Published
Refereed?: Yes

38. Vallières M, Laberge S, Levesque IR, El Naqa I. (2014). Enhancement of texture-based metastasis prediction models via the optimization of PET/MRI acquisition protocols. Medical Physics. American Association of Physicists in Medicine (AAPM) 56th Annual Meeting, (434-435),
Conference Date: 2014/7
Abstract
Published
Refereed?: Yes

39. Vallières M, Kumar A, Sultanem K, and El Naqa I. (2013). FDG-PET Imaging Features Can Predict Treatment Outcomes in Head and Neck Cancer. Medical Physics. Fifty-fifth annual meeting of the American association of physicists in medicine, (519-519),
Abstract
Published
Refereed?: Yes

40. Vallières M, Freeman C, Skamene S, and El Naqa I. (2013). Joint FDG-PET/MR Imaging for the Early Prediction of Tumor Outcomes. Medical Physics. Fifty-fifth annual meeting of the American association of physicists in medicine, (477-477),
Abstract
Published
Refereed?: Yes

41. Vallières M, Kumar A, Sultanem K, and El Naqa I. (2013). FDG-PET Image-Derived Features Can Determine HPV Status in Head-and-Neck Cancer. International Journal of Radiation Oncology, Biology, Physics. American Society for Radiation Oncology (ASTRO) Annual Meeting, (S467),
Abstract
Published
Refereed?: Yes

42. Vallières M, Kumar A, Sultanem K, El Naqa I. (2013). FDG-PET Image-derived features can determine HPV status in head and neck cancer. International Journal of Radiation Oncology Biology Physics. American Society for Radiation Oncoloy (ASTRO) 55th Annual Meeting, (S467),
Conference Date: 2013/9
Abstract
Published
Refereed?: Yes

43. Vallières M, Freeman C. Skamene S. El Naqa I. (2013). Joint FDG-PET/MR imaging for the early prediction of tumor outcomes. Medical Physics. American Association of Physicists in Medicine (AAPM) 55th Annual Meeting, (477),
Conference Date: 2013/8
Abstract
Published
Refereed?: Yes

44. Vallières M, Kumar A, Sultanem K, El Naqa I. (2013). FDG-PET imaging features can predict treatment outcomes in head and neck cancer. Medical Physics. American Association of Physicists in Medicine (AAPM) 55th Annual Meeting, (519),
Conference Date: 2013/8
Abstract
Published
Refereed?: Yes

45. Markel D, El Naqa I, Freeman C, and Vallières M. (2012). A Novel Semi-automated Multimodality Segmentation Tool for Radiation Therapy Treatment Planning in Sarcoma Patients. International Journal of Radiation Oncology, Biology, Physics. American Society for Radiation Oncology (ASTRO) Annual Meeting, (S854),
Abstract
Published
Refereed?: Yes

46. Seuntjens J, Serban M, Vallières M, Hathout L, Freeman C, and El Naqa I. (2012). Dose-escalation based on MR-PET/CT for soft-tissue sarcoma. International Journal of Radiation Oncology, Biology, Physics. American Society for Radiation Oncology (ASTRO) Annual Meeting, (S660-S661),
Abstract
Published
Refereed?: Yes

47. Vallières M, Freeman CR, Skamene SR, and El Naqa I. (2012). Prediction of Tumor Outcomes Through Wavelet Image Fusion and Texture Analysis of PET/MR Imaging. Medical Physics. Fifty-fourth annual meeting of the american association of physicists in medicine, (3615-3615),
Abstract
Published
Refereed?: Yes, Invited?: No

48. Vallières M, Freeman CR, Skamene SR, El Naqa I. (2012). FDG-PET Features and Outcomes in Patients With Soft-tissue Sarcomas of the Extremities. International Journal of Radiation Oncology, Biology, Physics. American Society for Radiation Oncology (ASTRO) Annual Meeting, (S167-S168),
Abstract
Published
Refereed?: Yes

49. Markel D, El Naqa I, Freeman C, and Vallières M. (2012). A Novel Level Set Active Contour Algorithm for Multimodality Joint Segmentation/Registration Using the Jensen-Rényi Divergence. Medical Physics. Fifty-fourth annual meeting of the american association of physicists in medicine, (3678-3678),
Abstract
Published
Refereed?: Yes

50. Vallières M, Freeman CR, Skamene SR, El Naqa I. (2012). FDG-PET features and outcomes in soft-tissue sarcomas of the extremities. International Journal of Radiation Oncology Biology Physics. American Society for Radiation Oncology (ASTRO) 54th Annual Meeting, (S167-S168),
Conference Date: 2012/10
Abstract
Published
Refereed?: Yes

51. Vallières M, Freeman CR, Skamene SR, El Naqa I. (2012). Prediction of tumor outcomes through wavelet image fusion and texture analysis of PET/MR imaging. Medical Physics. American Association of Physicists in Medicine (AAPM) 54th Annual Meeting, (3615),
Conference Date: 2012/7
Abstract
Published
Refereed?: Yes