

Dr. Fehmi Jaafar

Correspondence language: English

Sex: Male

Date of Birth: 11/19

Designated Group: Visible Minority

Canadian Residency Status: Canadian Citizen

Contact Information

The primary information is denoted by (*)

Address

Primary Affiliation (*)

Computer Research Institute of Montréal
405 Ogilvy Avenue #101
Montreal Quebec H3N 1M3
Canada

Temporary

Concordia University
1455 Boulevard de Maisonneuve O
Montreal Quebec H3G 1M8
Canada
2019/06/01 - 2022/06/01

Telephone

Mobile (*)	1-514-5688163
Work	1-514-8401234 extension: 3103

Email

Personal	jaafar@cs.queensu.ca
Work (*)	fehmi.jaafar@crim.ca

Website

Personal	http://fehmijaafar.net/
----------	---

Dr. Fehmi Jaafar

Language Skills

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

Degrees

- 2015/10 - 2016/8 **Post-doctorate, Cybersecurity, Polytechnique Montréal**
 Degree Status: Completed
 Supervisors: Gabriela Nicolescu, 2015/10 - 2016/8
- 2014/1 - 2015/4 **Post-doctorate, Computer Sciences and Cybersecurity, Queen's University**
 Degree Status: Completed
 Supervisors: Mohammad Zulkernine, 2014/1 - 2015/4
- 2009/9 - 2013/12 **Doctorate, Ph.D., Computer Sciences, Université de Montréal**
 Degree Status: Completed
 Thesis Title: Analyzing the Software Systems Evaluation and Quality
 Supervisors: Sylvie Hamel, 2009/9 - 2013/12; Yann-Gaël Guéhéneuc, 2009/9 - 2013/12
- 2007/9 - 2009/7 **Master's Thesis, Computer sciences, Université de Tunis**
 Degree Status: Completed
 Thesis Title: Using Text Mining and Knowledge Management in Web Services Adaptation
 Supervisors: Rim Fayez, 2007/9 - 2009/7
- 2003/9 - 2007/6 **Bachelor's, Computer Engineering, Université de Tunis**
 Degree Status: Completed
 Thesis Title: Machine Learning Techniques to Improve the Electronic Documentation Management
 Supervisors: Jalel Akaichi, 2006/9 - 2007/6

User Profile

Researcher Status: Data Security Researcher

Key Theory / Methodology: Applied Machine Learning - Pattern Recognition - Statistical Analysis - Change Log Mining - Applied Artificial Intelligence

Research Interests: Data Security - Internet of Things - Privacy Assurance - Data Protection

Research Specialization Keywords: Cyber Security, Internet of Things, Software Quality, Software Engineering

Employment

- 2017/12 **Researcher**
 Research and Development, Computer Research Institute of Montréal
 Full-time
 Elaborate industrial research projects with industrial partners and universities - Supervise students from undergraduate and graduate programs in Canadian Universities - Develop innovative technologies and approaches in data security and applied machine learning.
- 2016/8 - 2019/12 **Adjunct Professor**
 Department of Information Systems Security and Assurance, Faculty of Management, Concordia University of Edmonton
 Full-time, Adjunct, Assistant Professor
 Tenure Status: Non Tenure Track
 Supervise graduate students who are working toward Master Degrees - Teach courses in Computer Science and Information Security - Plan lessons and assignments – Work with colleagues to develop the curriculum for the Master degree and certificate programs - Assess students' progress by grading papers, tests, and other work - Serve on academic and administrative committees that review and recommend policies and make budget decisions.
- 2015/3 - 2016/8 **Research Scientist**
 Research and Development, Ubitrak Inc.
 Full-time
 Discover, analyze and track advanced cyber intrusion campaigns and document lessons learned - Lead applied research projects in cyber security from specification to realization within timely and budgetary constraints.
- 2014/4 - 2015/4 **Software Developer Analyst**
 OMP Music
 Part-time
 Participate in the creation of a new nomenclature and teaching system that makes the process of learning, playing, and teaching music much easier and faster using Big Data Analytic.
- 2010/1 - 2013/12 **Teaching assistant**
 Computer Science and Operations Research, Université de Montréal
 Part-time, Term
 Tenure Status: Non Tenure Track
 Prepare labs, assignments, and oral presentation of material - Provide learning tasks and supervise students working in groups.
- 2011/9 - 2011/12 **Lecturer**
 Department of Computer Engineering, École Polytechnique de Montréal
 Full-time, Sessional, Lecturer
 Tenure Status: Non Tenure Track
 Lecturer for INF3410: Requirements Specification and Systems Analysis (undergraduate course)
- 2006/1 - 2007/6 **IT Analyst/Developer**
 Le Campus Numérique francophone de Tunis, Agence Universitaire de la Francophonie
 Part-time
 Research, design, implement and manage software programs - Test and evaluate new programs - Identify areas for maintenance in existing programs - Write and implement efficient code.

Affiliations

2020/6	<p>Vice Chair of the ISO/IEC/SC Internet of Things and related technologies Canadian Committee, Standards Council of Canada</p> <p>Work towards creating international standards and guidelines for the development of IoT networks and architectures - Follow international and SCC's principles of transparency and consensus, and actively contribute to reaching committee consensus - Promote and position the ISO/IEC/JTC initiatives and work activities nationally - Foster and value cooperation with other ISO and IEC Committees and partners.</p>
2019/1	<p>Member of the Scientific Committee, Canada's Cybersecurity Industry Cluster, InsecM</p> <p>Review research projects - Create the research program of the organisation - Initiate the research activities of the organisation.</p>
2019/5	<p>Member of the Canadian Data Governance Standardization Collaborative, Standards Council of Canada</p> <p>Build and leverage Canadians Standards with industry partners in data privacy and data security areas – Contribute in clearly defined standardization strategies for data governance - Raise issues and risks that need to be recorded and resolved to promote the adoption of responsible AI.</p>
2020/2 - 2023/2	<p>Affiliate Assistant Professor, Université du Québec à Chicoutimi</p> <p>Contribute to the Computer Sciences undergraduate and graduate programs through supervision of students in data privacy and data security areas.</p>
2019/6 - 2022/6	<p>Affiliate Assistant Professor, Concordia University</p> <p>Supervise graduate and undergraduate students. Initiate research projects and collaborations with external funding in data privacy and data security.</p>

Research Funding History

Ongoing [n=4]

2019/4 - 2024/3 Principal Investigator	<p>Research Program on Securing the Internet of Things Sustainability, Grant</p> <p>Funding Sources:</p> <p>Natural Sciences and Engineering Research Council of Canada (NSERC) NSERC – Discovery Grants Program Total Funding - 127,000 Portion of Funding Received - 127,000 Funding Competitive?: Yes</p>
2019/5 - 2022/2 Principal Investigator	<p>Data Security and Privacy Assurance at LABVI (The Open-Air Smart Living Lab), Grant</p> <p>Funding Sources:</p> <p>Ercison - Videotron - The Quartier de l'Innovation Mathematics of Information Technology and Complex Systems (MITACS) Accelerate program Total Funding - 83,000 Portion of Funding Received - 83,000 Funding Competitive?: Yes</p>
2020/5 - 2021/3 Co-applicant	<p>SPAM/HAM Clustering, Grant</p> <p>Funding Sources:</p>

ZEROSPAM
 Prompt
 Cybersecurity Innovation Program - Quebec
 Total Funding - 150,000

2020/9 - 2021/2
 Principal Investigator Facing the Cyber-attacks Against Connected Things that Control the City of Gatineau Water Treatment Infrastructures, Contract

Funding Sources:

Gatineau City
 Prompt
 Cybersecurity Innovation Program - Quebec
 Total Funding - 25,000

Completed [n=12]

2018/4 - 2019/9
 Principal Investigator Autonomous Penetration Testing Using Machine Learning, Grant

Funding Sources:

Ministère de l'Économie, de la Science et de l'Innovation (Quebec)
 Passeport Innovation
 Total Funding - 75,000
 Portion of Funding Received - 75,000
 Funding Competitive?: Yes
 PM SCADA Cyber Defense

2018/5 - 2019/4
 Co-applicant Evaluation of the Maturity of the Earth Observation Cloud Architecture, Grant

Funding Sources:

2018/5 - 2019/4 The Open Geospatial Consortium
 The OGC Testbed-14
 Total Funding - 120,000
 Portion of Funding Received - 60,000 (Canadian dollar)
 Funding Competitive?: Yes

2018/11 - 2019/4
 Principal Applicant Cyber Attribution based on Machine Learning for Defence Canada, Grant

Funding Sources:

2018/11 - 2019/4 National Defence (Canada)
 Innovation for Defence Excellence and Security (IDEaS)
 Total Funding - 165,000
 Portion of Funding Received - 80,000
 Funding Competitive?: Yes

2018/5 - 2018/8
 Principal Investigator Facing IoT Distributed Denial-of-service Attacks using Machine Learning, Grant

Funding Sources:

Government of Canada and Government of Alberta
 Student Training and Education Program (STEP)
 Total Funding - 10,000
 Portion of Funding Received - 10,000
 Funding Competitive?: Yes

2017/4 - 2018/3
 Principal Investigator The Cyber Security Cooperation Program grant, Grant

Safety Canada - Concordia University of Edmonton
The Cyber Security Cooperation Program
Total Funding - 20,000
Portion of Funding Received - 20,000
Funding Competitive?: Yes

2015/10 - 2017/10
Principal Applicant

A Systematic Approach for Privilege Escalation Prevention, Fellowship

Funding Sources:

Ubitrak Inc.
Mathematics of Information Technology and Complex Systems
(MITACS)
Elevate Research Scholarship in Computer Security
Total Funding - 120,000
Portion of Funding Received - 60,000
Funding Competitive?: Yes

2017/5 - 2017/8
Principal Investigator

Private Blockchain Network for IoT Device Firmware Integrity Verification and Update,
Grant

Funding Sources:

Government of Canada and Government of Alberta
STEP Canada-Alberta Grant
Total Funding - 10,000
Portion of Funding Received - 10,000
Funding Competitive?: Yes

2014/11 - 2015/2
Co-applicant

Research Scholarship in Web and Mobile Computing, Scholarship

Funding Sources:

Mathematics of Information Technology and Complex Systems
(MITACS)
Accelerate program
Total Funding - 90,000
Portion of Funding Received - 15,000
Funding Competitive?: Yes

2012/9 - 2013/9
Principal Applicant

Doctoral Excellence Fellowship, Scholarship

Funding Sources:

Faculté des études supérieures de l'Université de Montréal
Doctoral Scholarship
Total Funding - 12,000
Portion of Funding Received - 12,000
Funding Competitive?: Yes

2009/9 - 2013/9
Principal Applicant

Doctoral Excellence Fellowship, Scholarship

Funding Sources:

Ministry of Higher Education, Scientific Research and Technology,
Tunisia
Excellence Scholarship in Computer Science
Total Funding - 50,000
Portion of Funding Received - 50,000
Funding Competitive?: Yes

2009/9 - 2013/8
Principal Applicant

Doctoral Foreign Scholarship, Scholarship

Funding Sources:

Faculté des études supérieures de l'Université de Montréal
Doctoral Foreign Scholarship
Total Funding - 50,000
Portion of Funding Received - 50,000
Funding Competitive?: Yes

2012/12 - 2013/1
Collaborator

On the Analysis of Deign Patterns and Clones, Grant

Funding Sources:

Agence Québec Wallonie Bruxelles pour la jeunesse (AQWBJ)
Research and development Grants
Total Funding - 20,000
Portion of Funding Received - 5,000
Funding Competitive?: Yes

Under Review [n=2]

2021/1 - 2023/12
Co-applicant

Proactive Security Framework in MIMO Systems and 5G Networks Using Machine Learning Techniques., Grant

Funding Sources:

Ericson
Mathematics of Information Technology and Complex Systems (MITACS)
Accelerate program
Total Funding - 160,000

2020/7 - 2021/3
Principal Investigator

Facing the Phishing Using Machine Learning and Artificial Intelligence?, Grant

Funding Sources:

ZEROSPAM
Mathematics of Information Technology and Complex Systems (MITACS)
Accelerate program
Total Funding - 60,000

Courses Taught

2019/01/01 -
2019/12/31

Lecturer, Concordia University of Edmonton

Course Title: ISSM 536 - Digital Forensics

Course Level: Graduate

Number of Credits: 3

Lecture Hours Per Week: 3

Tutorial Hours Per Week: 4

2018/01/01 - 2019/12/31	Lecturer, Concordia University of Edmonton Course Title: ISSM 525 - Securing an E-Commerce Infrastructure Course Level: Graduate Number of Credits: 3 Lecture Hours Per Week: 3 Tutorial Hours Per Week: 4
2016/08/01 - 2019/12/31	Lecturer, Concordia University of Edmonton Course Title: ISSM 551: Disaster Recovery and Planning Course Level: Graduate Number of Credits: 3
2017/01/01 - 2018/04/30	Lecturer, Concordia University of Edmonton Course Title: ISAM 521: Information Systems Audit Course Level: Graduate Number of Credits: 3 Lecture Hours Per Week: 3 Tutorial Hours Per Week: 4
2010/09/06 - 2013/12/20	Teaching Assistant, Université de Montréal Course Title: IFT 1015 - Programmation I
2013/01/01 - 2013/04/30	Lecturer, École Polytechnique de Montréal Course Title: LOG 3410: Software Requirements Specification Course Level: Undergraduate Number of Credits: 3 Lecture Hours Per Week: 3 Tutorial Hours Per Week: 4
2013/01/08 - 2013/03/29	Teaching Assistant, École Polytechnique de Montréal Course Title: INF1010: Object Oriented Programming
2012/10/01 - 2012/11/09	Lecturer, Université de Montréal Course Title: IFT 1025: Advanced Web Programming Course Level: Undergraduate Number of Credits: 3 Lecture Hours Per Week: 3
2011/11/06 - 2012/09/29	Lecturer, École Polytechnique de Montréal Course Title: LOG 4430: Software Architecture and Advanced Design

Course Development

2016/01 - 2018/08	Lecturer and Course Development, Research and Development, Ubitrak Inc. Course Title: Secure Software Development Course Level: Graduate Secure development in the early stages of the software development life cycle - Learn secure coding practices, standards and guidelines
-------------------	---

Student/Postdoctoral Supervision

Bachelor's [n=4]

2020/1 - 2020/12 Co-Supervisor	Khaireddine Mejri (In Progress), Mediterranean Institute of Technology Thesis/Project Title: IoT Energy Consumption Analysis for Malware Infection Detection.
-----------------------------------	--

2020/1 - 2020/12 Co-Supervisor	Ameny Masmoudi (In Progress), Mediterranean Institute of Technology Thesis/Project Title: Security Enhancing of SCADA Systems in Renewable Energy Platforms.
2019/5 - 2020/5 Internship Supervisor and Industrial Advisor	Jean Decian (Completed), the student is from Polytechnique Montreal, I supervised his internship at CRIM. Thesis/Project Title: An Active Soft Fingerprinting for Internet of Things Devices to Mitigate Distributed Denial-of-Service Attacks Using Botnets
2018/5 - 2018/9 Principal Supervisor	Ryan Sandoval (Completed), the student is from the University of Alberta, I supervised his internship at Concordia University of Edmonton. Thesis/Project Title: The Specification and the Development of an Incident Assistance Tool to Automatically Investigate Cyber Incidents. Present Position: System Integration Engineer, General Dynamics Mission

Master's Thesis [n=22]

2018/1 - 2019/4 Principal Supervisor	Samuel Ubaneche (Completed), Concordia University of Edmonton Thesis/Project Title: Specification and implementation of a new data privacy assurance block-chain model. Present Position: Mainframe Infrastructure Engineer, BMO Financial Group
2018/1 - 2019/6 Industrial Advisor	Arushi Jain (Completed), the student is from McGill University, I was her Industrial Advisor during her internship at CRIM. Thesis/Project Title: Safety Analysis in Hierarchical Reinforcement Learning.
2018/1 - 2019/7 Principal Supervisor	Samim Khalili (Completed), Concordia University of Edmonton Thesis/Project Title: Enhancing authentication and key agreement procedure in 5G mobile network using geo-encryption technique Present Position: Information Security Consultant
2017/9 - 2018/7 Principal Supervisor	Ranbir Bali (Completed), Concordia University of Edmonton Thesis/Project Title: Lightweight authentication for MQTT by using topic-based self-key agreement and block cipher Present Position: Senior Information Security Analyst, NTT DATA Services
2017/9 - 2018/6 Principal Supervisor	Babajide Adegoke (Completed), Concordia University of Edmonton Thesis/Project Title: Exploring the use of pre-shared key in the authentication process of LTE base stations Present Position: Information Security Professional
2017/6 - 2018/12 Co-Supervisor	Gurpreet Kaur (Completed), Concordia University of Edmonton Thesis/Project Title: Detecting blind cross-site attacks using machine learning Present Position: IT Analyst, Alberta Health Services
2017/5 - 2018/12 Principal Supervisor	Caesar Jude Clemente (Completed), Concordia University of Edmonton Thesis/Project Title: Solving Software Insecurity Present Position: Faculty member, Douglas College
2017/4 - 2018/9 Co-Supervisor	Gurjot Balraj Singh (Completed), Concordia University of Edmonton Thesis/Project Title: Analysis of Overhead Caused by Security Mechanisms in IaaS Cloud Present Position: Enterprise Security Operations Analyst, Canadian Pacific Railway
2017/1 - 2018/4 Principal Supervisor	Samip Dhakal (Completed), Concordia University of Edmonton Thesis/Project Title: Blockchain for authentication in IoT Present Position: Security Analyst, eSentire Inc.
2017/1 - 2018/7 Principal Supervisor	Damanjeet Kaur (Completed), Concordia University of Edmonton Thesis/Project Title: Taxonomy of Android Vulnerabilities. Present Position: Technical Support Analyst, NTT DATA Services

2017/1 - 2018/9 Principal Supervisor	Tunde Yekini (Completed), Concordia University of Edmonton Thesis/Project Title: Study of Trust at Device Level of the Internet of Things Architecture Present Position: Senior Information Security Analyst, TD Bank Group (TD)
2017/1 - 2018/2 Principal Supervisor	Jasmeen Kaur Babrah (Completed), Concordia University of Edmonton Thesis/Project Title: In-Depth Experimental Analysis of Behavior of Crypto-Ransomware Present Position: IT Consultant, Government of Alberta
2017/1 - 2018/12 Principal Supervisor	Pooja Prasad (Completed), Concordia University of Edmonton Thesis/Project Title: Securing Cyber Physical System in Health Care Environment
2017/1 - 2018/12 Principal Supervisor	Mayank Ashwinkumar Jaiswal (Completed), Concordia University of Edmonton Thesis/Project Title: System Call Analysis of Malware Application on Android Platform Present Position: Information and Network Security Analyst, Star POS
2017/1 - 2018/6 Principal Supervisor	Walter Isharufe (Completed), Concordia University of Edmonton Thesis/Project Title: Study of Security Issues in Platform-as-a-Service (PaaS) Cloud Model Present Position: Information Security Analyst - Governance, Risk Management and Compliance, Bennett Jones
2017/1 - 2018/12 Co-Supervisor	Harjot Kaur (Completed), Concordia University of Edmonton Thesis/Project Title: Unauthorized Data Leakage from an Organisation through Web Browser Fingerprinting Vulnerability Present Position: Anti-Virus Analyst, Fortinet
2017/1 - 2018/6 Principal Supervisor	Gagandeep Singh (Completed), Concordia University of Edmonton Thesis/Project Title: An Analysis of Android Malware Behavior Present Position: IT Analyst
2016/9 - 2017/12 Co-Supervisor	Ruchi Mishr (Completed), Concordia University of Edmonton Thesis/Project Title: Behavioural Study of Malwares Impacting Financial Institutions and Clients Present Position: Data Protection Specialist, Scotiabank
2016/9 - 2017/12 Co-Supervisor	Pratibha Singh (Completed), Concordia University of Edmonton Thesis/Project Title: Enhancing Bio-metric Security with Combinatoric Multi-Fingerprint Authentication Strategies Present Position: Program analyst
2016/9 - 2017/12 Co-Supervisor	Manjinder Singh (Completed), Concordia University of Edmonton Thesis/Project Title: Analyzing overhead from security and administrative functions in virtual environment Present Position: IT Consultant, Government of Alberta
2016/5 - 2017/12 Co-Supervisor	Anis Kothia Chhotubhai (Completed), Concordia University of Edmonton Thesis/Project Title: Integration and automation of subdomain enumeration and service scanning tools to improve overall information gathering process Present Position: Senior Cyber Security Analyst, Alberta Health Services
2014/6 - 2015/12 Academic Advisor	Maryam Davari (Completed), Queen's University Thesis/Project Title: Classifying and Predicting Software Security Vulnerabilities Based on Reproducibility Present Position: Research assistant, Purdue University

Doctorate [n=5]

- 2019/11 - 2022/12
Co-Supervisor
Marcela Gonçalves dos Santos (In Progress), University of Quebec at Chicotimi
Student Degree Start Date: 2019/9
Student Degree Expected Date: 2022/12
Thesis/Project Title: Securing the Data Privacy in IoT Infrastructures
- 2019/1 - 2020/9
Industrial Advisor
Manel Grichi (In Progress), the student is from Polytechnique Montreal, I am her Industrial Advisor during her internship at CRIM.
Thesis/Project Title: Quality and Security Analysis in Multi-language systems
- 2018/4 - 2020/6
Academic Advisor
Asmaa TELLABI (In Progress), University of Siegen Erlangen, Germany
Thesis/Project Title: The Safety Critical Requirements in Virtualization
- 2017/1 - 2014/1
Academic Advisor
Darine Ameyed (Completed), École de Technologie Supérieure
Thesis/Project Title: Modélisation et spécification formelle de contexte et sa prédiction dans les systèmes diffus : une approche basée sur la logique temporelle et le modèle stochastique.
Present Position: Postdoctoral researcher in Synchronmedia Lab, École de Technologie Supérieure at Montreal
- 2014/6 - 2015/6
Academic Advisor
Md Shahrear Iqbal (Completed), Queen's University
Thesis/Project Title: Smartphone Security and Privacy
Present Position: Ph. D. student

Post-doctorate [n=1]

- 2018/11 - 2019/9
Co-Supervisor
Florent Avellaneda (Completed), The Computer Research Institute of Montreal
Student Canadian Residency Status: Permanent Resident
Thesis/Project Title: The Cyber Attribution for Defense Canada
Present Position: Postdoc, Computer Research Institute of Montréal

Summary of Staff Supervision

Number of Highly Qualified Personnel in Research and Industrial Training: 32

Number of Visiting Researchers: 2

Number of Volunteers: 5

Event Administration

- 2020/2 - 2020/12
Steering Committee Member, IoT Security Forum, Workshop, Internet Society Canada Chapter
The organization and financial planning of the Forum. Specification of the key ideas of the Forum and its strategic direction Making decisions, especially around the Forum venue and date, the budget and the overall technical content of the Forum.
- 2020/1 - 2020/8
Program Chair, The 2nd Asia IoT Technologies Conference, Conference
Ensuring that a well-balanced, high-quality technical program is organized and presented at the conference. Developing the conference's call for papers. Managing the peer review process and the conference schedule.
- 2019/1 - 2020/1
Program Chair, International Conference on Multimedia and Image Processing, Conference
Ensuring that a well-balanced, high-quality technical program is organized and presented at the conference. Developing the conference's call for papers. Managing the peer review process and the conference schedule.

2017/1 - 2019/6	Organization Committee Member, The Annual Information Security and Assurance Research Event at Concordia University of Edmonton., Workshop
2018/11 - 2019/5	Co-organizer and Program Manager, Artificial Intelligence and Cyber-security Workshop under the 87th ACFAS Congress., Workshop
2018/6 - 2018/10	Co-organizer, Forum In-Sec-M, Conference

Editorial Activities

2020/6	Reviewer, Transactions on Dependable and Secure Computing, Journal
2019/6 - 2019/12	Reviewer, IEEE Transactions on Industrial Informatics, Journal
2019/6 - 2019/12	Reviewer, Information and Software Technology, Journal
2019/6 - 2019/11	Reviewer, The 30th International Symposium on Software Reliability Engineering (ISSRE 2019), Conference
2018/8 - 2019/9	Reviewer, IEEE Embedded Systems Letters, Journal
2018/5 - 2018/7	Reviewer, FM 2019: 23rd International Symposium on Formal Methods – 3rd World Congress on Formal Methods, Conference
2017/11 - 2018/5	Reviewer, Journal of Systems and Software, Journal
2017/1 - 2017/10	Reviewer, International Journal of Applied Engineering Research, Journal
2014/7 - 2015/3	Reviewer, Software Quality Journal, Journal
2014/1 - 2014/4	Reviewer, 2014 Eighth International Conference on Software Security and Reliability (SERE), Conference

Expert Witness Activities

2018/5 - 2019/2	Contributor and Member of the Orientation Committee, Cyber-security for 4.0 Environments in Quebec., Canada, Montreal Promote the development of cyber-security in an industry 4.0 environment - Identify the cyber-security challenges related to the Industry 4.0.
2019/10 - 2019/1	Contributor, The Digital Joint Research and Innovation Benchmark., Canada, Montreal Identify best practices in cybersecurity in the advanced manufacturing sector including critical infrastructure, evaluate their level of use and promote their adoption.

Research Funding Application Assessment Activities

2019/1 - 2019/12	External Reviewer, Application Evaluation, Academic Reviewer, Mathematics of Information Technology and Complex Systems -MITACS Number of Applications Assessed: 2
2018/1 - 2019/12	Committee Member, Scholarship Committee, Academic Reviewer, The Computer Research Institute of Montreal Number of Applications Assessed: 20

Organizational Review Activities

- 2018/12 - 2020/12 External Expert and Auditor, Auditor General of Quebec - Le Vérificateur Général du Québec
Inspect and evaluate the information security of a set of **provincial organisations**. Evaluate the efficiency, effectiveness and compliance of operation processes with corporate security policies and related government regulations.
- 2019/9 - 2020/4 Auditor, In-Sec-M the Canadian Cluster of the Cyber-security Industry
Computer Security Evaluation and Audit of Canadian Organizations during a set of Strategic Interventions.
- 2019/1 - 2019/6 Reviewer, Télé-université
Evaluation of an Undergraduate Program in Computer Science at TÉLUQ University, part of the Québec University system.

Event Participation

- 2019/6 - 2019/10 Presenter, Cyber-security and Personal Data, Conference
- 2018/11 - 2019/2 Speaker, IT Connect 2019, Workshop
- 2017/12 - 2018/2 Presenter, Techno Scientific Day, Seminar

Community and Volunteer Activities

- 2017/1 - 2018/12 Volunteer, Action For Healthy Communities
Assistance to help newcomers: learn about their community, navigate access to mainstream and community services and resources, develop stronger connections in their new community in Canada and connect to new networks and support groups.

Knowledge and Technology Translation

- 2017/12 - 2018/12 Project Manager and Principal Researcher, R&D Collaboration with Industry
Group/Organization/Business Serviced: PM SCADA
Target Stakeholder: Industry/Business-Medium (100 to 500 employees)
Outcome / Deliverable: Development of an intelligent penetration test application.
Evidence of Uptake/Impact: This project aims to integrate machine learning and artificial intelligence techniques into the PEN testing framework to reduce PEN testing human resource requirements while maximizing test coverage.
- 2018/4 - 2018/5 Contributor and Panelist, R&D Collaboration with Industry
Group/Organization/Business Serviced: Le Centre Facilitant la Recherche et l'Innovation dans les Organisations (CEFRIO)
Target Stakeholder: Industrial Consortium
Outcome / Deliverable: Supporting companies and organizations in transforming their business processes and practices through the appropriation and use of digital technology.
- 2015/1 - 2016/8 Project Manager and Researcher, R&D Collaboration with Industry
Group/Organization/Business Serviced: Ubitrak Inc.
Target Stakeholder: Industry/Business-Small (<100 employees)
Outcome / Deliverable: Real Time Detection of Privilege Escalation by an Attacker.

- 2014/7 - 2015/3 Software Developer Analyst, Consulting for Industry
Group/Organization/Business Serviced: OMP Music
Target Stakeholder: Industry/Business-Small (<100 employees)
Outcome / Deliverable: Creation of a new nomenclature and teaching system that makes the process of learning, playing, and teaching music much easier and faster using Big Data Analytic.
- 2014/6 - 2015/3 Research Advisor, R&D Collaboration with Industry
Group/Organization/Business Serviced: Irdeto
Target Stakeholder: Industry/Business (>500 employees)
Outcome / Deliverable: Click Fraud Detection & Protection Tool.

International Collaboration Activities

- 2018/6 - 2020/9 Research Program Adviser, Germany
Specifying a novel hypervisor specially designed for real-time embedded systems to be secure, reliable and efficient.
- 2018/3 - 2018/8 Contributor and Participant, Canada
Participation and writing of the Regional Leaders' Summit (RLS 2018) Digital Joint Research and Innovation Benchmark. The Regional Leaders Summit (RLS) is a forum comprising seven regional governments: Bavaria (Germany), Georgia (USA), Québec (Canada), São Paulo (Brazil), Shandong (China), Upper Austria (Austria), and Western Cape (South Africa). The main objective of the Benchmark was to share to set a common ground. It was also the occasion to witness a diversity of practices and solutions and identifying path for future collaborations.
- 2018/5 - 2018/5 Presenter and Researcher, Canada
Presenting the Research & Development activities at the Computer Research Institute of Montreal for an Indian government delegation.
- 2012/11 - 2013/2 Visiting Researcher, Belgium
Creating a long term collaboration between Montreal University in Canada and Université Catholique de Louvain in Belgium to develop new software quality analysis approaches.

Committee Memberships

- 2019/1 Committee Member, Advisory Committee Member, Auditor General of Quebec - Vérificateur Général du Québec
- 2018/6 - 2019/3 Committee Member, Technical Committees, The 3rd International Conference on Cryptography, Security and Privacy
- 2018/3 - 2019/3 Committee Member, Scientific Committee, The IEEE International Conference on Big Data, Deep Learning and Fighting Cyber Terrorism
- 2018/6 - 2018/10 Committee Member, The In-Sec-M Cyber Security Forum Organizing Committee, the Canadian cluster of the cyber-security industry, InSecM Forum Planning/Local Arrangements - Panelist suggestion and invitation - Forum Program Planning.
- 2018/1 - 2018/8 Committee Member, The Graduate Scholarships Program Committee, Computer Research Institute of Montréal
Participate in the review of applications and provide recommendations based on the selection criteria - Reading, scoring, and providing in-depth evaluations for a subset of applications - Recommending potential new members.

Other Memberships

2019/1	Member of the Foundations of Data Governance, Standards Council of Canada Contribute in the promotion of a compatible and equitable set of standards for data governance -Contribute in Canadian Standards for the Foundations of Data Governance
2017/12	Employee Campaign Member, Centraide of Greater Montreal Support the activity of raising funds to improve the quality of life in Greater Montreal communities and empower its most vulnerable members.
2014/6	Member, The Alumni and Donor Network of Montreal University Support Outreach activities and new projects of Montreal University.

Presentations

1. René Breyel, Walter Knitl, and Mourad Debbabi. (2019). IoT CyberSecurity – A fragmented challenge. IT Connect at the Champlain College Saint-Lambert, Montreal, Canada
Main Audience: General Public
Invited?: Yes, Keynote?: Yes
Description / Contribution Value: Discussing the best practices to implement “IoT Security by Design”.
2. Schallum Pierre and Julie Paquette. (2018). Securing the information and Social Media.The "Cybersecurity and Social Media" study day at Saint Paul University., Ottawa, Canada
Main Audience: General Public
Invited?: Yes, Keynote?: Yes
3. Pascal Monette, Gilles Savard, Lyne Dubois. (2018). Cyber-security Challenges in Industry 4.0. The ninth edition of the Regional Leaders's Summit (RLS 2018), Quebec, Canada
Main Audience: Decision Maker
Invited?: Yes, Keynote?: Yes
4. José M. Fernandez, Gabriela Nicolescu, Biswajit Nandy, etc. (2018). Combating Insider Threats by Profiling from Activity Logging Data. The Cybersecurity Forum organized by InSec-M, Ottawa, Canada
Main Audience: General Public
Invited?: Yes, Keynote?: Yes
5. Robert Nastas, Jean LeDuc, Jérémie Farret. (2018). Cyber-security issues in the Internet of Things.Cyber-security and Internet of Things Workshop at CRIM, Montreal, Canada
Invited?: Yes, Keynote?: Yes
6. Rudolf Ferenc, Radu Marinescu, etc. (2013). Static Relationships with Design Patterns.First Workshop on Patterns Promotion and Anti-patterns Prevention (PPAP), Italy
Invited?: Yes, Keynote?: No
7. Kim Mens, Ángela Lozano, etc. (2013). Clones and Co-changes: a systematical review. The REsearch Laboratory on software Evolution And Software Development technology Event (RELEASeD), Belgium
Invited?: Yes, Keynote?: Yes

Broadcast Interviews

2018/04/23	Research Activities in Cybersecurity at the Computer Research Institute of Montreal, Catherine Mathys https://www.youtube.com/watch?v=-Va3xHePYdo
------------	--

Text Interviews

2019/06/15

Securing Private Data in IoT Networks, Jessica Dostie

<https://www.ledevoir.com/societe/science/556567/plaidoyer-pour-des-donnees-mieux-protegees>

Publications

Journal Articles

1. Manel Grichi, Fehmi Jaafar, and Yasir Malik. (2020). A Comparative Analysis of Security Bug Prediction using Deep Learning versus Traditional Machine Learning Algorithms. The IEEE Transactions on Dependable and Secure Computing. Submitted.
2. Manel Grichi, Mouna Abidi, Fehmi Jaafar, Ellis E. Eghan, and Bram Adams. (2020). On the Impact of Inter-language Dependencies in Multi-language Systems. The IEEE Transactions on Reliability. Accepted.
3. Zeinab (Azadeh) Kermansaravi, Md. Saidur Rahman, Fehmi Jaafar, Foutse Khomh, and Yann-Gaël Guéhéneuc. (2020). Investigating Design Patterns and Design Anti-pattern Mutations and their Change-and Fault-proneness. Empirical Software Engineering. Accepted,
4. Mohammad Shahrear Iqbal, Fehmi Jaafar, Mohammad Zulkernine, and Yuan Gu. (2018). Protecting internet users from becoming victimized attackers of click-fraud. Journal of Software: Evolution and Process. 3(30) Published.
5. Darine Ameyed, Moeiz Miraoui, Atef Zaguia, Fehmi Jaafar, and Chakib Tadj. (2018). Using Probabilistic Temporal Logic PCTL and Model Checking for Context Prediction. Computing and Informatics Journal. Accepted.
6. Fehmi Jaafar, Angela Lozano, Kim Mens, and Yann-Gaël Guéhéneuc. (2017). Analyzing Software Evolution and Quality by Extracting Asynchrony Change-patterns. Journal of Systems and Software. Published.
7. Fehmi Jaafar, Yann-Gaël Guéhéneuc, Sylvie Hamel, Foutse Khomh, and Mohammad Zulkernine. (2016). Evaluating the Impact of Design Pattern and Anti-pattern Dependencies on Faults and Changes. Journal of Empirical Software Engineering. Published.
8. Angela Lozano, Fehmi Jaafar, Kim Mens, and Yann-Gaël Guéhéneuc. (2014). Clones and Macro co-changes. Journal of Electronic Communications of the European Association of Software Science and Technology. Published.
9. Fehmi Jaafar, Yann-Gaël Guéhéneuc, Giuliano Antoniol, and Sylvie Hamel. (2014). Detecting Asynchrony and Dephase Change Patterns by Mining Software Repositories. Journal of Software : Evolution and Process. Published.
10. Fehmi Jaafar, Yann-Gaël Guéhéneuc, Sylvie Hamel, and Foutse Khomh. (2013). Analysing Anti-patterns Static Relationships with Design Patterns. Electronic Communication of the European Association of Software Science and Technology. 59 Published.

Books

1. (2020). Social Network and Cyber Security. Schallum Pierre and Fehmi Jaafar.
Co-Author
Submitted, Laval University Press, Quebec, Canada

Book Chapters

1. Kolade Fodayemi Awe, Yasir Malik, Pavol Zavarsky, and Fehmi Jaafar. (2020). Validating BGP Update Using Blockchain-Based Infrastructure. Mohammad Ayoub Khan, Mohammad Tabrez Quasim, and Fahad Algarni. Decentralised Internet of Things: A Blockchain Perspective.
Co-Author
Accepted, Springer Publishing, New York, United States
2. Fehmi Jaafar and Jean Decian. (2020). Cyber Attacks Against Social Network: Lessons Learned. Social Network and Cyber Security.
Submitted.

Reports

1. Co-Author. The RLS Digital Joint Research and Innovation Benchmark: Cybersecurity in 4.0. Description / Contribution Value: The Regional Leaders Summit (RLS) is a multilateral political forum of seven partner regions: Bavaria (Germany), Georgia (USA), Québec (Canada), São Paulo (Brazil), Shandong (China), Upper Austria (Austria), and Western Cape (South Africa). I participated in the 2018 summit as an Expert and Benchmark Contributor.
2. (2020). Rapport du Vérificateur général du Québec à l'Assemblée nationale : Gestion des identités et des accès informatiques. 46. Vérificateur Général du Québec.
Description / Contribution Value: External expert and contributor.

Conference Publications

1. Fehmi Jaafar, Florent Avellaneda, and El-Hackemi Alikacem. (2020). Demystifying the Cyber Attribution: An Exploratory Study. The IEEE Cyber Science and Technology Congress (CyberSciTech).
Published
2. Ruchi Mishra, Sergey Butakov, Fehmi Jaafar, and Neelam Memon. (2020). Behavioral Study of Malware Affecting Financial Institutions and Clients. The IEEE Cyber Science and Technology Congress (CyberSciTech).
Published
3. Marcela dos Santos, Bianca Napoleao, Fabio Petrillo, Darine Ameyed and Fehmi Jaafar. (2020). A Preliminary Systematic Mapping on Software Engineering for Robotic Systems: A Software Quality Perspective. The 2nd International Workshop on Software Engineering Research & Practices for the Internet of Things (SERP4IoT 2020), Republic of Korea.
Published
4. Adegoke Babajide Seyi, Fehmi Jaafar and Ron Ruhl. (2020). Securing the Authentication Process of LTE Base Stations. The IEEE International Conference on Electrical, Communication and Computer Engineering, Istanbul, Turkey.
Published
5. Walter Isharufe, Fehmi Jaafar, and Sergey Butakov. (2020). Study of Security Issues in Platform-as-a-Service (PaaS) Cloud Model. The IEEE International Conference on Electrical, Communication and Computer Engineering, Istanbul, Turkey.
Published
6. Najji Zhang, Fehmi Jaafar, and Yasir Malik. (2019). Low-Rate DoS Attack Detection Using PSD based

- Entropy and Machine Learning. The 6th IEEE International Conference on Cyber Security and Cloud Computing (IEEE CSCloud 2019), France.
Published
7. Carlos Renato Salim Campos, Fehmi Jaafar, and Yasir Malik. (2019). Detecting Android Security Vulnerabilities Using Machine Learning and System Calls Analysis. IEEE International Workshop on Data-driven System Quality Assurance, QRS Companion 2019, Bulgaria.
Published
 8. Asmaa Tellabi, Fehmi Jaafar, Sabri Abdelbast, and Christoph Ruland. (2019). On the Analysis of the Impact of Scheduling Plans in Safety Critical Requirements in Virtualization. IEEE International Conference on Cybersecurity 2019 (ICoCSEC2019), Malaysia.
Published
 9. Tunde Akeem Yekini, Fehmi Jaafar and Pavol Zavorsky. (2019). Study of Trust at Device Level of the Internet of Things Architecture. The International Symposium on High Assurance Systems Engineering, China.
Published
 10. Anis Kothia, Bobby Swar, and Fehmi Jaafar. (2019). Knowledge Extraction and Integration for Information Gathering in Penetration Testing. IEEE International Workshop on Software Engineering and Knowledge Management, QRS Companion, Bulgaria.
Published
 11. Florent Avellaneda, El-Hachemi Alikacem, and Fehmi Jaafar. (2019). Using Attack Pattern for Cyber Attack Attribution. IEEE International Conference on Cybersecurity 2019 (ICoCSEC2019), Malaysia.
Published
 12. Samip Dhakal, Fehmi Jaafar, and Pavol Zavorsky. (2019). Private Blockchain Network for IoT Device Firmware Integrity Verification and Update. The International Symposium on High Assurance Systems Engineering, China.
Published
 13. Jasmeen Kaur, Fehmi Jaafar, and Pavol Zavorsky. (2018). Experimental Analysis of Behavior of Crypto Ransomware. The Thirteenth International Conference on Systems, ICONS, Greece.
Published
 14. Manjinder Singh, Sergey Butakov and Fehmi Jaafar. (2018). Analyzing Overhead from Security and Administrative Functions in Virtual Environment. The IEEE 2018 International Conference on Platform Technology and Service, PlatCon, Republic of Korea.
Published
 15. Caesar Jude Clemente, Fehmi Jaafar, and Yasir Malik. (2018). Is Predicting Software Security Bugs using Deep Learning Better than the Traditional Machine Learning Algorithms?. IEEE International Conference on Software Quality, Reliability, and Security, Portugal.
Published
 16. Gagandeep Singh, Fehmi Jaafar, Pavol Zavorsky. (2018). An Analysis of Android Malware Behavior. IEEE International Workshop on Information Assurance, Portugal.
Published
 17. Mayank Jaiswal, Yasir Malik, and Fehmi Jaafar. (2018). Android Gaming Malware Detection Using System Call Behaviour Analysis. The IEEE International Symposium on Digital Forensic and Security, ISDFS, Turkey.
Published
 18. Pooja Rajendra Prasad, Sergey Butakov, and Fehmi Jaafar. (2018). Information Security Considerations for Wireless Infusion Pumps. IEEE International Workshop on Safety and Security in Cyber-Physical Systems, Portugal.
Published

19. Gurpreet Kaur, Yasir Malik, and Fehmi Jaafar. (2018). Detecting Blind Cross-Site Attacks Using Machine Learning. The International Conference on Signal Processing and Machine Learning, China.
Published
20. Ranbir Singh Bali, Fehmi Jaafar and Pavol Zavarasky. (2018). Lightweight Authentication for MQTT by using Topic-Based Self Key Agreement and Block Cipher. International Conference on Cryptography, Security and Privacy (ICCSP 2019), Kuala Lumpur, Malaysia.
Published
21. Gurjot Balraj Singh, Fehmi Jaafar, Sergey Butakov. (2018). Analysis of Overhead Caused by Security Mechanisms in IaaS Cloud. The IEEE International Conference on Control, Decision and Information Technologies, CoDIT 2018, Thessaloniki, Greece.
Published
22. Maryam Davari, Mohammad Zulkernine, and Fehmi Jaafar. (2017). An Automatic Software Vulnerability Classification Framework. The International Conference on Software Security and Assurance (ICSSA), Altoon, United States.
Published
23. Fehmi Jaafar. (2017). An Integrated Architecture for IoT Fingerprinting. IEEE QRS Companion 2016. IEEE International Conference on Software Quality, Reliability and Security, Prague, Czech Republic.
Published
24. Harjot Kaur, Pavol Zavarasky, and Fehmi Jaafar. (2017). Unauthorized Data Leakage from an Organisation through Web Browser Fingerprinting Vulnerability. The IEEE World Congress on Internet Security, London, United Kingdom.
Published
25. Fehmi Jaafar, Angela Lozano, Yann-Gael Gueheneuc, and Kim Mens. (2017). On the Analysis of Co-Occurrence of Anti-Patterns and Clones. IEEE International Conference on Software Quality, Reliability and Security, Prague, Czech Republic.
Published
26. Fehmi Jaafar, Gabriela Nicolescu, and Christian Richard. (2016). A Systematic Approach For Privilege Escalation Prevention. IEEE International Conference on Software Quality, Reliability and Security, Companion, Vienna, Austria.
Published
27. Md Shahrear Iqbal, Fehmi Jaafar, Mohammad Zulkernine, and Yuan Gu. (2016). Fighting Click-Fraud from User Side. IEEE High Assurance Systems Engineering Symposium, Orlando, United States.
Published
28. Darine Ameyed, Fehmi Jaafar, and Jaouhar Fattahi. (2015). A Slow Read attack Using Cloud. The International Conference on Electronics, Computers and Artificial Intelligence, Bucharest, Romania.
Published
29. Fehmi Jaafar, Foutse Khomh, Yann-Gaël Guéhéneuc, and Mohammad Zulkernine. (2014). Anti-pattern Mutations and Fault-proneness. The 14th International Conference on Quality Software, Dallas, United States.
Published
30. Fehmi Jaafar, Salima Hassaine, Yann-Gael Gueheneuc, Sylvie Hamel, and Bram Adams. (2013). On the Relationship Between Program Evolution and Fault-proneness. European Conference on Software Maintenance and Re-engineering, Genova, Italy.
Published
31. Nasir Ali, Fehmi Jaafar, and Ahmed E. Hassan. (2013). Leveraging Historical Co-Change Information for Requirements Traceability. The Working Conference on Reverse Engineering, Koblenz-Landau, Germany,
Published
32. Fehmi Jaafar, Yann-Gael Gueheneuc, Sylvie Hamel, and Foutse Khomh. (2013). Mining the Relationship Between Anti-patterns Dependencies and Fault-proneness. Working Conference on Reverse Engineering,

Koblenz-Landau, Germany.

Published

33. Fehmi Jaafar. (2012). On the analysis of evolution of software artefacts and programs. The IEEE International Conference on Software Engineering - The Doctoral Symposium, Switzerland.
Published