JASON JASKOLKA | Ph.D.

Department of Systems and Computer Engineering – Carleton University
Canal Building 6206 – 1125 Colonel By Drive – Ottawa, ON K1S 5B6 – Canada

☎ +1 (613) 520-2600 Ext. 1873 • ✉ jason.jaskolka@carleton.ca
🌐 sce.carleton.ca/faculty/jaskolka

EDUCATION

Ph.D. Software Engineering — Sept. 2010–Mar. 2015
McMaster University — *Hamilton, ON, Canada*
Advisor: Ridha Khedri
Thesis: *On the Modelling, Analysis, and Mitigation of Distributed Covert Channels*

M.A.Sc. Software Engineering — May 2009–Sept. 2010
McMaster University — *Hamilton, ON, Canada*
Advisor: Ridha Khedri
Thesis: *Modeling, Analysis, and Detection of Information Leakage via Protocol-Based Covert Channels*

B.Eng. Software Engineering & Game Design (Summa Cum Laude) — Sept. 2005–Apr. 2009
McMaster University — *Hamilton, ON, Canada*

OTHER CREDENTIALS

Certificate in University Teaching — Dec. 2017
Carleton University — *Ottawa, ON, Canada*

EMPLOYMENT HISTORY

ACADEMIC EMPLOYMENT

Assistant Professor — Jul. 2017–Present
Department of Systems and Computer Engineering, Carleton University — *Ottawa, ON, Canada*
Tenure Status: *Tenure-Track*

o Research involves cybersecurity, software engineering, distributed systems, and formal specification and verification in an effort to develop systematic and rigorous approaches for evaluating and assuring the security of software-dependent systems

o Teaching courses related to software engineering and computer security

U.S. Department of Homeland Security Cybersecurity Postdoctoral Scholar — Jan. 2016–Jun. 2017
Center for International Security and Cooperation, Stanford University — *Stanford, CA, USA*

o Worked on the project "Cybersecurity Assurance For Critical Infrastructure," which aimed to design and develop critical infrastructure cybersecurity assessment methodologies and associated modelling and simulation environments

o Investigated formal methods-based approaches for identifying and analyzing security vulnerabilities arising from implicit component interactions in critical distributed systems, networks, and infrastructures

o Conducted full-time research in an interdisciplinary research environment comprised of perspectives from areas of technology, science, international security, and policy

Postdoctoral Research Associate   Aug. 2015–Dec. 2015

McMaster Centre for Software Certification, McMaster University   *Hamilton, ON, Canada*

o Part of the embedded software research thrust area for the FCA-McMaster Automotive Partnership Canada – Leadership in Automotive Powertrain (APC-LEAP) project

o Studied the application of model-driven software engineering and development practices for real-world problems for automotive industrial applications, specifically in collaboration with Fiat Chrysler Automobiles

o Investigated the development of solutions for cybersecurity issues in automotive engineering

Postdoctoral Fellow   Apr. 2015–Aug. 2015

Department of Mathematics, Statistics & Computer Science, St. Francis Xavier University   *Antigonish, NS, Canada*

o Worked on a research project on the application of software engineering architectural design patterns to systematically guide the design and development of maintainable, extendable, and reusable ontologies

o Engaged in interactions with graduate students on issues dealing with their research and thesis writing

Research Assistant   May 2008–Aug. 2008

Department of Computing and Software, McMaster University   *Hamilton, ON, Canada*

o Designed, documented, and implemented a software tool for the analysis and verification of cryptographic protocols

OTHER EMPLOYMENT

Engineering Systems Assistant   Apr. 2007–Aug. 2007

Ministry of Transportation of Ontario (MTO)   *St. Catherines, ON, Canada*

o Managed the MTO Registry, Appraisal, and Qualification (RAQS) system

o Created statistical reports and tables using data collected from the RAQS system

o Wrote software business requirements documents for system enhancements

o Tested and verified software modules and enhancements using various techniques

RESEARCH INTERESTS, AREAS, AND THEMES

My research is motivated by the need for the advancement of rigorous and practical approaches to address increasingly critical issues in designing, implementing, evaluating, and assuring the safe, secure, and reliable operation of software-dependent systems. I conduct research that spans the areas of cybersecurity, software engineering, distributed systems, and formal specification and verification. I am interested in exploring new ideas, techniques, and tools that can support cybersecurity evaluation and assurance activities and advance security-by-design approaches leading to improved system security and higher system confidence.

RESEARCH SPECIALIZATION KEYWORDS

o cybersecurity

o assurance

o evaluation

o formal methods

o software engineering

o security-by-design

o software architecture and design

o distributed multi-agent systems

o cyber-resilience

o cyber-physical systems

o modelling and simulation

o algebraic approaches

RESEARCH FUNDING

Lifetime Research Funding Awarded: $265,088

AWARDED

CU Development Grants – NSE	2018
Principal Investigator	*$10,000*

Carleton University (Grant)
"Validating the Effectiveness of Security Design Patterns"

Critical Infrastructure Resilience Institute (CIRI) Research Project	2018-2019
Principal Investigator	*$111,488*

United States Department of Homeland Security, Science & Technology Directorate (Research Contract)
"Cybersecurity Assurance for Critical Infrastructure"

Carleton University Start-Up Fund	2017
Principal Investigator	*$70,000*

Carleton University (Grant)

UNDER REVIEW

Innovation for Defence, Excellence and Security (IDEaS) Program	2018
Principal Investigator	*$150,192*

Department of National Defence (DND) (Grant)
"Risk-Based Cyber Intent Analysis Framework for Enhanced Cyber Response Decision Support"

Canadian Safety and Security Program (CSSP)	2018
Co-Applicant	*$1,353,000*

Defence Research and Development Canada (Grant)
"System-Level Security for IoT-enabled e-Health Systems"

COMPLETED

Natural Resources Canada Research Project	2018
Principal Investigator	*$23,000*

Natural Resources Canada (Research Contract)
"Assurance Cases for Security and Resilience of Advanced Metering Infrastructure"

NSERC Postgraduate Scholarship (PGS D)	2012–2014
Principal Applicant	*$42,000*

Natural Sciences and Engineering Research Council of Canada (National Scholarship)

Queen Elizabeth II Graduate Scholarship in Science and Technology (QEII-GSST)	2011
Principal Applicant	*$10,000*

Ontario Ministry of Training, Colleges and Universities (Provincial Scholarship)

Ontario Graduate Scholarship (OGS)	2010
Principal Applicant	*$15,000*

Ontario Ministry of Training, Colleges and Universities (Provincial Scholarship)

NSERC Alexander Graham Bell Canada Graduate Scholarship (CGS M)	2009
Principal Applicant	*$17,500*

Natural Sciences and Engineering Research Council of Canada (National Scholarship)

NSERC Undergraduate Student Research Award   2008
Principal Applicant   *$8,100*
Natural Sciences and Engineering Research Council of Canada (National Scholarship)

TEACHING ACTIVITIES

COURSES TAUGHT

SYSC 3020: Introduction to Software Engineering   Summer 2018
Carleton University   *Ottawa, ON, Canada*
Undergraduate Course, Enrollment: 44

SYSC 3120: Software Requirements Engineering   Winter 2018
Carleton University   *Ottawa, ON, Canada*
Undergraduate Course, Enrollment: 69

CONTRIBUTIONS TO TEACHING

Developed New Graduate Course: Security Engineering   2018
Department of Systems and Computer Engineering, Carleton University *Ottawa, ON, Canada*

o Course offered for the first time as SYSC 5807 in Winter 2019

OTHER TEACHING ACTIVITIES

Teaching Assistant   Sept. 2006–Apr. 2015
McMaster University   *Hamilton, ON, Canada*

o Led lab and teaching sessions while using my leadership skills to demonstrate key course components to students

o Prepared and presented labs, tutorials, and lectures while utilizing my communication skills to engage the students in the class material for a variety of courses including:

  - Software Design (Graduate Course)
  - Large System Design
  - Concurrent System Design
  - Computer Networks & Computer Security
  - Software Requirements & Security Considerations
  - Real-Time Systems & Control Applications
  - 4D Modelling For Virtual Reality
  - Introduction to Programming
  - Computer Based Problem Solving
  - Engineering Computation

Teaching & Learning Forum Panelist   2013–2014
McMaster University   *Hamilton, ON, Canada*

o Participated as a Panel Speaker, discussing teaching strategies and approaches for increasing student participation, accommodating different learning styles, and best practices for teaching in science and engineering fields

o Provided advice about teaching to graduate students who will be employed as Teaching Assistants

Private Tutor   Nov. 2011–Nov. 2013
McMaster University   *Hamilton, ON, Canada*

o Presented course material in a question and answer style and provided support in developing problem solving skills for two courses: Logic & Discrete Mathematics (Graduate Course) and Introduction to Computer Science (High School Course)

STUDENT SUPERVISION & TRAINING

DOCTORATE

Niolfar Mansourzadeh   Sept. 2018–Present
Ph.D. Computer Science (co-supervised with Anil Somayaji), *Carleton University* (In-Progress)
Thesis: *Population-Level Trust in Computer Systems*

MASTER'S

Thomas Sattolo   Sept. 2018–Present
M.A.Sc. Electrical and Computer Engineering, *Carleton University* (In-Progress)
Thesis: *Detecting Protocol-Based Covert Channels in Distributed Networked Systems*

FIRST YEAR SUMMER INTERNS

Dylan Leveille   May 2018–July 2018
Department of Systems and Computer Engineering, Carleton University (Completed)   *Ottawa, ON, Canada*
Project: *Specification Generator for* C^2KA *Tool Support*

Idir Zerrouk   May 2018–July 2018
Department of Systems and Computer Engineering, Carleton University (Completed)   *Ottawa, ON, Canada*
Project: *Specification Generator for* C^2KA *Tool Support*

FOURTH-YEAR UNDERGRADUATE ENGINEERING PROJECTS

Secure Electronic Communication Platform   Sept. 2017–Apr. 2018
Department of Systems and Computer Engineering, Carleton University (Completed)   *Ottawa, ON, Canada*
Student Team Members: *Mohamed Dahrouj, Ali Farah, Tosin Oni, Lava Tahir, Vincent Vu*

Transportation Worker Identification Credential (TWIC) Access Control System   Sept. 2017–Apr. 2018
Department of Systems and Computer Engineering, Carleton University (Completed)   *Ottawa, ON, Canada*
Student Team Members: *Amer Binmuhana, Liam Disley, Craig Isesele, Abinayen Sivakumar, Daniel Srouji*

OTHER STUDENT SUPERVISION & TRAINING ACTIVITIES

Mentor   Jan. 2014–Dec. 2015
McMaster University   *Hamilton, ON, Canada*

o Supervised the work of three Masters students over the span of my time as a senior Ph.D. student and Postdoctoral Research Associate

o Met regularly with students to discuss their work, resolve issues, and monitor their progress

THESIS EXAMINATION COMMITTEES

EXAMINATION COMMITTEE CHAIR

Irem Bor-Yaliniz   July 2018
Ph.D. Electrical and Computer Engineering (Comprehensive Examination: Proposal Defence)
Department of Systems and Computer Engineering, Carleton University
Thesis: *Using Mobility for Agility: Enhancing Wireless Networks with Aerial Access Nodes and User Involvement*

Hoda Khalil   Mar. 2018
Ph.D. Electrical and Computer Engineering (Comprehensive Examination: Proposal Defence)
Department of Systems and Computer Engineering, Carleton University
Thesis: *FSM Testing Approach Based on Transition Trees and Complete Round Trip Paths Testing Criteria*

Yaser Fouad   Dec. 2017
Ph.D. Electrical and Computer Engineering (Comprehensive Examination: Proposal Defence)
Department of Systems and Computer Engineering, Carleton University
Thesis: *Number-Theoretic Sequence Design for Uncoordinated Resource Block Assignments in Relay-Assisted Machine-Type Communication Systems*

Nikhilesh Pradhan   Dec. 2017
M.A.Sc. Biomedical Engineering (Thesis Defence)
Department of Systems and Computer Engineering, Carleton University
Thesis: *Evaluation of the Signal Quality of Wrist-Based Photoplethysmography*

EXAMINATION BOARD MEMBER OF THE DEPARTMENT

Cristina Ruiz Martín   Mar. 2018
Ph.D. Electrical and Computer Engineering (Thesis Defence)
Department of Systems and Computer Engineering, Carleton University
Thesis: *A Framework to Study the Resilience of Organizations: A Case Study of a Nuclear Emergency Plan*

Mohamed Abdelsalam   Jan. 2018
Ph.D. Electrical and Computer Engineering (Thesis Defence)
Department of Systems and Computer Engineering, Carleton University
Thesis: *Network Application Design Challenges and Solutions in SDN*

SERVICE & OUTREACH

COMMUNITY

Scientific Advisory Committee on Digital Health Technologies (SAC-DHT)   Oct. 2018–Oct. 2020
Ad Hoc Member, Health Canada   *Ottawa, ON, Canada*

DEPARTMENT

Recruitment Coordinator   2018–2019
Department of Systems and Computer Engineering, Carleton University   *Ottawa, ON, Canada*

Systems & Computer Engineering Hiring Committee (Cybersecurity)   2018
Department of Systems and Computer Engineering, Carleton University   *Ottawa, ON, Canada*

Systems & Computer Engineering Endowments Selection Committee   2018
Department of Systems and Computer Engineering, Carleton University   *Ottawa, ON, Canada*

Ontario Graduate Scholarship (OGS) Selection Committee   2018
Department of Systems and Computer Engineering, Carleton University   *Ottawa, ON, Canada*

Domestic Recruitment Committee   2017
Department of Systems and Computer Engineering, Carleton University   *Ottawa, ON, Canada*

CAS Appointments Graduate Student Committee   2014
Department of Computing and Software, McMaster University   *Hamilton, ON, Canada*

Graduate Orientation Day   2011–2012
Department of Computing and Software, McMaster University   *Hamilton, ON, Canada*

Software Engineering Club 2007–2009
Department of Computing and Software, McMaster University *Hamilton, ON, Canada*

FACULTY

Associate Dean Graduate (Engineering) Search Committee June 2014
Faculty of Engineering, McMaster University *Hamilton, ON, Canada*

Graduate Curriculum and Policy Committee Sept. 2011–Sept. 2014
Faculty of Engineering, McMaster University *Hamilton, ON, Canada*

Engineering Undergraduate Workshop 2014
Faculty of Engineering, McMaster University *Hamilton, ON, Canada*

Engineering and Science Olympics & Open House 2009–2012
Faculty of Engineering, McMaster University *Hamilton, ON, Canada*

UNIVERSITY

Research Misconduct Hearings Panel Apr. 2014–Mar. 2015
McMaster University *Hamilton, ON, Canada*

Graduate Council Sept. 2011–Sept. 2014
McMaster University *Hamilton, ON, Canada*

SCHOLARLY & PROFESSIONAL ACTIVITIES

EVENT ADMINISTRATION

Track Chair

o Served as a track chair for a number of conferences:
  - Winter Simulation Conference (WSC) 2019
    Track: *Simulation and Cybersecurity*
  - 10th International Conference on Ambient Systems, Networks and Technologies (ANT) 2019
    Track: *System Software Engineering*

Program Committee Member

o Served on the program committee for a number of conferences and workshops including:
  - International Workshop on Interplay of Security, Safety and System/Software Architecture (ISSA) 2018
  - ACS/IEEE International Conference on Computer Systems and Applications (AICCSA) 2017–2018
  - International Conference on Ambient Systems, Networks and Technologies (ANT) 2014–2018
  - International Conference on New Trends in Information Technology (NTIT) 2017
  - Annual Cyber Security and Information Intelligence Research Workshop (CSIIRW) 2012

Seminar Director Jan. 2011–Mar. 2015
FRAISE Research Group, Department of Computing and Software, McMaster University *Hamilton, ON, Canada*

o Organized and chaired seminars for the Formal Requirements and Information Security Enhancement (FRAISE) Research Group

o Communicated with group members about meetings and other events

o Constructed, updated, and maintained the FRAISE Research Group webpage

Assessment and Review Activities

Journal Reviewer

o Refereed a total of 13 journal article submissions for the following journals:

– Frontiers of Computer Science	2018
– Sensors	2017 & 2018
– Knowledge and Information Systems	2018
– Computational Intelligence	2017
– Simulation Modelling Practice and Theory	2017
– International Journal of Ad Hoc and Ubiquitous Computing	2017
– Computer Standards & Interfaces	2017
– Journal of Computer Security	2017
– Security and Communication Networks	2012 & 2015
– Applied Mathematics & Information Sciences	2015
– Annals of Telecommunications	2013

Conference Reviewer

o Refereed a total of 34 submissions for a number of conferences including:

– International Workshop on Interplay of Security, Safety and System/Software Architecture (ISSA)	2018
– IEEE Conference on Communications and Network Security (IEEE CNS)	2018
– ACS/IEEE International Conference on Computer Systems and Applications (AICCSA)	2017–2018
– International Conference on Ambient Systems, Networks and Technologies (ANT)	2012–2018
– International Conference on New Trends in Information Technology (NTIT)	2017
– Cybersecurity and Cyberforensics Conference (CCC)	2016
– International Symposium on Foundations of Health Information Engineering and Systems (FHIES)	2012
– Annual Cyber Security and Information Intelligence Research Workshop (CSIIRW)	2012
– International Workshop on Discrete Event Systems (WODES)	2012
– International Conference on Application and Theory of Petri Nets and Concurrency (Petri Nets)	2012

HONOURS & AWARDS

Department of Computing and Software Graduate Student Paper Award — 2014
McMaster University (Institutional Award)

McMaster Student Union (MSU) Teaching Assistant Merit Award — 2013
McMaster University (Institutional Award)

Dean's Award for Excellence in Communicating Graduate Research — 2012
McMaster University (Institutional Award)

Dr. Harry Lyman Hooker Scholarship — 2008
McMaster University (Institutional Award)

Motorola Software Engineering Scholarship — 2007
McMaster University (Institutional Award)

McMaster University Dean's Honour List — 2007–2009
McMaster University (Institutional Award)

McMaster University Entrance Scholarship — 2005
McMaster University (Institutional Award)

PUBLICATIONS

Publication links can be found at: http://www.sce.carleton.ca/faculty/jaskolka/publications-by-type.html

JOURNAL ARTICLES

[1] **J. Jaskolka** and J. Villasenor, "An approach for identifying and analyzing implicit interactions in distributed systems," *IEEE Transactions on Reliability*, vol. 66, pp. 529–546, June 2017.

[2] **J. Jaskolka** and R. Khedri, "Mitigating covert channels based on analysis of the potential for communication," *Theoretical Computer Science*, vol. 643, pp. 1–37, Aug. 2016.

[3] **J. Jaskolka**, R. Khedri, and K. Sabri, "Investigative support for information confidentiality," *Journal of Ambient Intelligence and Humanized Computing*, vol. 6, pp. 425–451, Aug. 2015.

[4] Q. Zhang, R. Khedri, and **J. Jaskolka**, "An aspect-oriented language for feature-modeling," *Journal of Ambient Intelligence and Humanized Computing*, vol. 5, pp. 343–356, June 2014.

CONFERENCE PROCEEDINGS

[5] Q. Rouland, B. Hamid, and **J. Jaskolka**, "Formalizing reusable communication models for distributed systems architecture," in *Proceedings of the 8th International Conference on Model and Data Engineering* (E. Abdelwahed, L. Bellatreche, M. Golfarelli, D. Méry, and C. Ordonez, eds.), vol. 11163 of *Lecture Notes in Computer Science*, (Marrakesh, Morocco), pp. 198–216, October 2018.

[6] **J. Jaskolka**, "Challenges in assuring security and resilience of advanced metering infrastructure," in *Proceedings of the 18th annual IEEE Canada Electrical Power and Energy Conference*, EPEC 2018, (Toronto, ON, Canada), pp. 1–6, October 2018.

[7] **J. Jaskolka** and J. Villasenor, "Identifying implicit component interactions in distributed cyber-physical systems," in *Proceedings of the 50th Hawaii International Conference on System Sciences*, HICSS-50, (Hilton Waikoloa Village, HI, USA), pp. 5988–5997, Jan. 2017.

[8] **J. Jaskolka**, W. MacCaull, and R. Khedri, "Towards an ontology design architecture," in *Proceedings of the 2015 International Conference on Computational Science and Computational Intelligence*, CSCI 2015, (Las Vegas, NV, USA), pp. 132–135, Dec. 2015.

[9] **J. Jaskolka** and R. Khedri, "Towards the certification of covert channel freeness in cloud-based systems," in *Proceedings of the 6th International Conference on Ambient Systems, Networks and Technologies* (E. Shakshuki, ed.), vol. 52 of *Procedia Computer Science, ANT 2015 and SEIT 2015*, (London, UK), pp. 318–325, June 2015.

[10] **J. Jaskolka** and R. Khedri, "A formulation of the potential for communication condition using C^2KA," in *Proceedings of the 5th International Symposium on Games, Automata, Logics and Formal Verification* (A. Peron and C. Piazza, eds.), vol. 161 of *Electronic Proceedings in Theoretical Computer Science*, (Verona, Italy), pp. 161–174, Open Publishing Association, Sept. 2014.

[11] **J. Jaskolka**, R. Khedri, and K. Sabri, "Investigative support for information confidentiality part II: Applications in cryptanalysis and digital forensics," in *Proceedings of the 9th International Conference on Future Networks and Communications* (E. Shakshuki, ed.), vol. 34 of *Procedia Computer Science, FNC 2014 and MobiSPC 2014*, (Niagara Falls, ON, Canada), pp. 266–275, Aug. 2014. *(Invited Paper)*.

[12] **J. Jaskolka**, R. Khedri, and K. Sabri, "Investigative support for information confidentiality part I: Detecting confidential information leakage via protocol-based covert channels," in *Proceedings of the 9th International Conference on Future Networks and Communications* (E. Shakshuki, ed.), vol. 34 of *Procedia Computer Science, FNC 2014 and MobiSPC 2014*, (Niagara Falls, ON, Canada), pp. 276–285, Aug. 2014. *(Invited Paper)*.

[13] **J. Jaskolka**, R. Khedri, and Q. Zhang, "Endowing concurrent Kleene algebra with communication actions," in *Proceedings of the 14th International Conference on Relational and Algebraic Methods in Computer Science* (P. Höfner, P. Jipsen, W. Kahl, and M. E. Müller, eds.), vol. 8428 of *Lecture Notes in Computer Science*, (Marienstatt, Germany), pp. 19–36, Springer International Publishing Switzerland, Apr. 2014.

[14] Q. Zhang, R. Khedri, and **J. Jaskolka**, "Verification of aspectual composition in feature-modeling," in *Proceedings of the 10th International Conference on Software Engineering and Formal Methods* (G. Eleftherakis, M. Hinchey, and M. Holcombe, eds.), vol. 7504 of *Lecture Notes in Computer Science*, (Thessaloniki, Greece), pp. 109–125, Springer Berlin/Heidelberg, Oct. 2012.

[15] **J. Jaskolka**, R. Khedri, and Q. Zhang, "On the necessary conditions for covert channel existence: A state-of-the-art survey," in *Proceedings of the 3rd International Conference on Ambient Systems, Networks and Technologies* (E. Shakshuki and M. Younas, eds.), vol. 10 of *Procedia Computer Science, ANT 2012 and MobiWIS 2012*, (Niagara Falls, ON, Canada), pp. 458–465, Aug. 2012.

[16] Q. Zhang, R. Khedri, and **J. Jaskolka**, "An aspect-oriented language for product family specification," in *Proceedings of the 3rd International Conference on Ambient Systems, Networks and Technologies* (E. Shakshuki and M. Younas, eds.), vol. 10 of *Procedia Computer Science, ANT 2012 and MobiWIS 2012*, (Niagara Falls, ON, Canada), pp. 482–489, Aug. 2012.

[17] **J. Jaskolka**, R. Khedri, and K. Sabri, "A formal test for detecting information leakage via covert channels," in *Proceedings of the 7th Annual Cyber Security and Information Intelligence Research Workshop*, CSIIRW-7, (Oak Ridge, TN, USA), pp. 1–4, Oct. 2011.

[18] **J. Jaskolka** and R. Khedri, "Exploring covert channels," in *Proceedings of the 44th Hawaii International Conference on System Sciences*, HICSS-44, (Koloa, Kauai, HI, USA), pp. 1–10, Jan. 2011.

[19] K. Sabri, R. Khedri, and **J. Jaskolka**, "Verification of information flow in agent-based systems," in *Proceedings of the 4th International MCETECH Conference on e-Technologies* (G. Babin, P. Kropf, and M. Weiss, eds.), vol. 26 of *Lecture Notes in Business Information Processing*, (Ottawa, ON, Canada), pp. 252–266, Springer Berlin/Heidelberg, May 2009. **(Nominated for Best Paper Award)**.

[20] K. Sabri, R. Khedri, and **J. Jaskolka**, "Specification of agent explicit knowledge in cryptographic protocols," in *Proceedings of the International Conference on Computer, Electrical, and Systems Science, and Engineering*, vol. 35 of *CESSE 2008*, (Venice, Italy), pp. 447–454, World Academy of Science, Engineering and Technology, Oct. 2008.

CONTRIBUTIONS TO BOOKS

[21] M. Bialy, V. Pantelic, **J. Jaskolka**, A. Schaap, L. Patcas, M. Lawford, and A. Wassyng, *Handbook of System Safety and Security: Cyber Risk and Risk Management, Cyber Security, Threat Analysis, Functional Safety, Software Systems, and Cyber Physical Systems*, ch. 3: Software Engineering for Model-Based Development by Domain Experts, pp. 39–64. Elsevier, first ed., Oct. 2016.

[22] K. Sabri, R. Khedri, and **J. Jaskolka**, *Advanced Technologies*, ch. 13: Algebraic Model for Agent Explicit Knowledge in Multi-agent Systems, pp. 224–250. IN-TECH, Oct. 2009.

TECHNICAL REPORTS

[23] **J. Jaskolka**, "Assurance cases for security and resilience of advanced metering infrastructure," Technical Report, Prepared for Natural Resources Canada, Mar. 2018.

[24] **J. Jaskolka** and J. Villasenor, "Securing cyber-dependent maritime systems and operations," NMIO Technical Bulletin vol. 12, National Maritime Intelligence-Integration Office, June 2017.

[25] M. Bialy, J. Carette, L. Gibson, **J. Jaskolka**, M. Lawford, B. Mackenzie, T. Maibaum, A. Mallya, G. Marks, V. Pantelic, A. Schaap, S. Shah, and A. Wassyng, "Phase 1 Quarterly Report 8 on APC LEAP – Embedded Software Project," Technical Report, McMaster Centre for Software Certification, Hamilton, ON, Canada, Dec. 2015.

[26] **J. Jaskolka**, W. MacCaull, and R. Khedri, "Towards an architectural framework for systematically designing ontologies," Tech. Rep. CAS-15-09-RK, McMaster University, Hamilton, ON, Canada, Nov. 2015.

[27] **J. Jaskolka**, R. Khedri, and Q. Zhang, "Foundations of communicating concurrent Kleene algebra," Tech. Rep. CAS-13-07-RK, McMaster University, Hamilton, ON, Canada, Nov. 2013.

[28] Q. Zhang, R. Khedri, and **J. Jaskolka**, "An aspect-oriented language based on product family algebra: Aspects specification and verification," Tech. Rep. CAS-11-08-RK, McMaster University, Hamilton, ON, Canada, Nov. 2011.

[29] **J. Jaskolka**, R. Khedri, and K. Sabri, "Information leakage via protocol-based covert channels: Detection, automation, and applications," Tech. Rep. CAS-11-05-RK, McMaster University, Hamilton, ON, Canada, Aug. 2011.

[30] K. Sabri, R. Khedri, and **J. Jaskolka**, "Automated verification of information flow in agent-based systems," Tech. Rep. CAS-09-01-RK, McMaster University, Hamilton, ON, Canada, Jan. 2009.

PRESENTATIONS

INVITED PRESENTATIONS

[1] **J. Jaskolka**, "Security and privacy in a connected world." Ingenious Talks Series, Ottawa, ON, Canada, Feb. 7, 2018.

[2] **J. Jaskolka**, "Identifying and analyzing implicit interactions in critical infrastructure." CIRI Webinar Series, Jan. 25, 2018.

[3] **J. Jaskolka**, "Formal approaches for automated security evaluation." SERENE-RISC Fall 2017 Workshop, Ottawa, ON, Canada, Oct. 25, 2017.

[4] **J. Jaskolka**, "Cybersecurity challenges and considerations for medical devices." IEEE Ottawa Chapter 125th EMBS Seminar Series, Ottawa, ON, Canada, Sept. 28, 2017.

[5] **J. Jaskolka** and J. Villasenor, "Cybersecurity assurance for critical infrastructure." 18th Meeting of the Software Certification Consortium, Annapolis, MD, USA, May 11, 2017.

[6] **J. Jaskolka** and J. Villasenor, "Supply chain cybersecurity assurance for critical infrastructure." Workshop on Building a Community of Practice in Smart Grid Cyber Security, University of Toronto, Toronto, ON, Canada, May 26, 2016.

[7] **J. Jaskolka**, R. Khedri, and K. Sabri, "Investigative support for information confidentiality part I: Detecting confidential information leakage via protocol-based covert channels." 9th International Conference on Future Networks and Communications, Niagara Falls, ON, Canada, Aug. 20, 2014.

[8] **J. Jaskolka**, R. Khedri, and K. Sabri, "Investigative support for information confidentiality part II: Applications in cryptanalysis and digital forensics." 9th International Conference on Future Networks and Communications, Niagara Falls, ON, Canada, Aug. 20, 2014.

Conference Presentations

[9] **J. Jaskolka** and J. Villasenor, "Identifying implicit component interactions in distributed cyber-physical systems." 50th Hawaii International Conference on System Sciences, Waikoloa Village, HI, USA, Jan. 7, 2017.

[10] **J. Jaskolka**, W. MacCaull, and R. Khedri, "Towards an ontology design architecture." 2015 International Conference on Computational Science and Computational Intelligence, Las Vegas, NV, USA, Dec. 9, 2015.

[11] **J. Jaskolka** and R. Khedri, "Towards the certification of covert channel freeness in cloud-based systems." 6th International Conference on Ambient Systems, Networks and Technologies, London, UK, June 5, 2015.

[12] **J. Jaskolka** and R. Khedri, "A formulation of the potential for communication condition using C^2KA." 5th International Symposium on Games, Automata, Logics and Formal Verification, Verona, Italy, Sept. 11, 2014.

[13] **J. Jaskolka**, R. Khedri, and Q. Zhang, "Endowing concurrent Kleene algebra with communication actions." 14th International Conference on Relational and Algebraic Methods in Computer Science, Marienstatt, Germany, Apr. 28, 2014.

[14] **J. Jaskolka**, R. Khedri, and Q. Zhang, "On the necessary conditions for covert channel existence: A state-of-the-art survey." 3rd International Conference on Ambient Systems, Networks and Technologies, Niagara Falls, ON, Canada, Aug. 29, 2012.

[15] **J. Jaskolka**, R. Khedri, and K. Sabri, "A formal test for detecting information leakage via covert channels." 7th Annual Cyber Security and Information Intelligence Research Workshop, Oak Ridge, TN, USA, Oct. 12, 2011.

[16] **J. Jaskolka** and R. Khedri, "Exploring covert channels." 44th Hawaii International Conference on System Sciences, Koloa, Kauai, HI, USA, Jan. 5, 2011.

Other Presentations

[17] **J. Jaskolka**, "Securing cyber-dependent maritime systems and operations." United States Coast Guard Pacific Area Executive Leadership Team Meeting, Stanford, CA, USA, Mar. 14, 2018.

[18] **J. Jaskolka**, "Cybersecurity assurance for critical infrastructure." Université du Québec en Outaouais, Gatineau, QC, Canada, Feb. 8, 2018.

[19] **J. Jaskolka** and J. Villasenor, "Identifying previously unknown linkages in critical infrastructure systems." Department of Homeland Security (DHS) National Protection and Programs Directorate (NPPD) Briefing, Washington, DC, USA, June 22, 2016.

[20] **J. Jaskolka** and J. Villasenor, "Identification and analysis of implicit component interactions in critical distributed systems." Centre for Power & Information (CPI) Seminar, University of Toronto, Toronto, ON, Canada, May 31, 2016.

[21] **J. Jaskolka** and J. Villasenor, "Identification and analysis of implicit component interactions in critical distributed systems." Critical Infrastructure Resilience Institute (CIRI) Seminar, University of Illinois at Urbana-Champaign, Urbana, IL, USA, May 24, 2016.

[22] **J. Jaskolka** and J. Villasenor, "Identification and analysis of implicit component interactions in critical distributed systems." CISAC Cyber Reading Group Seminar, Stanford University, Stanford, CA, USA, Apr. 21, 2016.

[23] **J. Jaskolka** and J. Villasenor, "Identification of implicit component interactions in critical infrastructures." *Poster Presentation* at the Critical Infrastructure Resilience Institute (CIRI) Kick-Off Event, University of Illinois at Urbana-Champaign, Urbana, IL, USA, Apr. 12, 2016.

PROFESSIONAL MEMBERSHIPS

Smart Cybersecurity Network (SERENE-RISC)   Dec. 2017–Present

Association for Computing Machinery (ACM)   Feb. 2015–Present

Institute of Electrical and Electronics Engineers (IEEE)   Feb. 2015–Present

Professional Engineers Ontario (PEO) — Engineering Intern (EIT)   Sept. 2012–Present

Golden Key International Honour Society   Oct. 2008–Present