Thematic Summary of Research Funding

Total research funding (Fundamental and Industry): $5.7M+

Fundamental research

- Recipient of NSERC Discovery grants for thirty-one years from April 1993 to March 2025 total NSERC award of $660,000

- A major beneficiary of Mitacs grants awards totaling $4.5M since 2016

- Several internal grants from Saint Mary's University totaling more than $25,000

- Theories and techniques: Clustering, prediction, classification, support vector machines, neural networks, genetic algorithms, soft computing, rough sets, fuzzy sets

- Applications: retail, text mining, engineering, finance, image processing

- More than 240 publications including refereed journal articles (67), refereed conference papers (135), edited volumes (15), and textbooks (3) - publication list is separately available.

- Supervised 186 research students (2 PDF, 13 Ph.D., 121 Master's, 48 UG)

Industry sponsored research

- Total funding since May 2015: $5M+

- Collaborated with seven other researchers

- Collaborated with thirty companies

- Four major funding agencies (Mitacs $4.5M, NSERC $660K, NRC-IRAP $115K, Invest Nova Scotia $345K)

- Collaborations with three SMU faculty members

International travel for collaborative research

- Funding from external entities for travel and accommodations: $34,000

- Four funding agencies

- Term positions at four institutions for research and teaching

Chronological Summary of Research Funding

Funding Agency	Funding Period	Funding Details	Funding Awarded
NSERC of Canada	April 2018 to March 2024	Individual Discovery Grant (Generalized sequential data mining using enhanced object representations based on preliminary clustering profiles) (Deferred twice - extended duration to 2027)	$204,000 ($34,000/year for 6 years)
Invest Nova Scotia	July 2024- February 2025	Productivity and Innovation Voucher Program Three R&D Projects with Wellnify.ai, Halifax Learning, Kardio Logistix	3*$15,000= $45,000
NRC-IRAP	June 2024 - February 2025	Science and Technology Assistance Program 1 project: Wellnify.ai	$5000*1=$5,000
Mitacs, Canada	June 2024 to October 2024	In collaboration with Indigenous Tech.AI Corporation Development to Support First Nations and Municipal Policing	$15,000 - includes industry contributions
Mitacs, Canada	May 2023 to October 2024	In collaboration with Nova Scotia Liquor Corporation Data summarization and visualization system for evidence-based decision making	$30,000 - includes industry contributions
Mitacs, Canada	June 2023 to October 2025	In collaboration with Kinduct Technologies Inc. Kinduct Platform Enhancement using Supervised and Unsupervised Learning	$120,000 - includes industry contributions
Mitacs, Canada	May 2024 to October 2028	Mitacs Internship to Accelerate Innovation - Innovating Retail Solutions for Telecom and Pharmacy Industries	$90,000 - includes industry contributions
Mitacs, Canada	Sept 2024 to Aug 2028	In collaboration with Citco (Halifax) Development of a Domain-Specific Q&A System for the Financial Services Industry	$180,000 - includes industry contributions
Mitacs, Canada	May 2024 to October 2028	In collaboration with Truverus Inc. Sentiment Analysis to Replace Rigid Surveys into Automated Adaptive Interviews	$180,000 - includes industry contributions
Mitacs, Canada	Jan 2024 to Aug 2025	In collaboration with SiftMed Inc. Enhancing Medical Data Analysis and Processing	$60,000 - includes industry contributions
Mitacs, Canada	Jan 2024 to Aug 2024	In collaboration with Adrigo Inc. Predictive Analytics for B2B SaaS Platform	$30,000 - includes industry contributions
Mitacs, Canada	May 2024 to Aug 2028	In collaboration with Kardio Diagnostix (IT41194) Unsupervised and Supervised Machine Learning Ensemble for Pediatric Cardiology Diagnostics	$120,000 - includes industry contributions

Mitacs, Canada	Jan 2024 to Aug 2024	In collaboration with Kardio Diagnostix (IT38334) Prescriptive Machine Learning in Pediatric Cardiology	$60,000 - includes industry contributions
Mitacs, Canada	Jan 2024 to Aug 2025	In collaboration with Insightwell Technologies Design and Deployment of a Generative AI Platform	$60,000 - includes industry contributions
Mitacs, Canada	Jan 2024 to Aug 2028	In collaboration with Artinus Consulting Inc. Artinus Cost-effective NLP solutions for digitization, translation, and insights of domain specific corpora	$133,333 - includes industry contributions Additional $80000 designated for Memorial University Total award $213,333
Mitacs, Canada	Sept 2023 to Nov 2023	Mitacs Globalink Research Award in collaboration with the Indo-Shastri Canadian Institute	$6000
Mitacs, Canada	June 2023 to October 2023	In collaboration with Forrest Green Solutions Ltd. Innovative Website and Web Application Development for Law Enforcement Mitacs-Business Strategy Internship	$15,000 - includes industry contributions
Mitacs, Canada	July 2023 to June 2025	In collaboration with Meraki IT Consulting Platform enhancement for government services using data analytics Mitacs-Business Strategy Internship	$135,000 - includes industry contributions
Mitacs, Canada	May 2023 to January 2024	In collaboration with Acuicy Product Development to Scale Low Carbon Business Intelligence Mitacs-Business Strategy Internship	$45,000 - includes industry contributions
Mitacs, Canada	October 2022 to June 2024	In collaboration with Nova Scotia Power DevOps of Descriptive and Predictive Analytics for Efficient Energy Supply and Work and Asset Management Mitacs-Business Strategy Internship	$150,000 - includes industry contributions
Mitacs, Canada	August 2022 to August 2023	In collaboration with Altudo. Website Design & Implementation, DevOps Automation and Business Process Automation Mitacs-Business Strategy Internship	$90,000 - includes industry contributions
Mitacs, Canada	July 2022 to November 2022	In collaboration with MightyIQ Inc. Prototype Intelligent ERP System for SMEs Mitacs-Business Strategy Internship	$30,000 - includes industry contributions
Mitacs, Canada	June 2022 to May 2023	In collaboration with AI Dynamics. Deployment, Testing and Enhancement of a Web-based Machine Learning platform Mitacs-Business Strategy Internship	$120,000 - includes industry contributions
Mitacs, Canada	May 2022 to September 2022	In collaboration with Nova Scotia Health Authority. Workforce Analytics in Nova Scotia Hospitals Mitacs-Business Strategy Internship	$30,000 - includes industry contributions

Mitacs, Canada	March 2022 to July 2022	In collaboration with LeadSift Inc. Natural language processing for Market Intelligence Mitacs-Business Strategy Internship	$30,000 - includes industry contributions
Mitacs, Canada	February 2022 to June 2022	In collaboration with AI Dynamics. Web based GUI for Data and Machine Learning Modeling Mitacs-Business Strategy Internship	$30,000 - includes industry contributions
NRC-IRAP	June 2022 - February 2023	Science and Technology Assistance Program 1 project: Kinduct Technologies	$5000*1=$5,000
Mitacs, Canada	September 2021 to January 2022	In collaboration with Optimize AI Technology Solutions. SafePath User Interface Development Mitacs-Business Strategy Internship	$10,000 - includes industry contributions
Mitacs, Canada	September 2021 to January 2022	In collaboration with Talem Health Analytics Autocropping and enhancing image dataset of vehicular accidents Mitacs-Accelerate Explore Internship	$6,000 - includes industry contributions
Mitacs, Canada	October 2021 to February 2022	In collaboration with Kent Building Supplies. Intelligent Inventory and Personnel Management Mitacs-Business Strategy Internship	$10,000 - includes industry contributions
NSBI	April 2021- February 2022	Productivity and Innovation Voucher Program Three R&D Projects with Bluelight Analytics, NxtGen Care and Dispension	2*$15,000+$25,000= $55,000
Mitacs, Canada	April 2021 to August 2021	In collaboration with Lexington Innovations Inc. Development of a heterogeneous data repository for rating broker recommendations in capital markets Mitacs-Business Strategy Internship	$10,000 - includes industry contributions
Mitacs, Canada	March 2021 to August 2023	In collaboration with Nxtgen Care. Temporal soft clustering for profiling and predictive analytics in elderly care homes. Mitacs-Accelerate Standard Graduate Research Internship Program	161,667 - includes industry contributions
Mitacs, Canada	April 2021 to August 2023	In collaboration with Citco (Canada) Inc. Financial Portfolio Reconciliation using Deconstructed Deep Learning. Mitacs-Accelerate Standard Graduate Research Internship Program	$135,000 - includes industry contributions
Mitacs, Canada	August 2021 to July 2023	In collaboration with Delmore Buddy Daye Learning Institute Inc. Evidence-driven strategies for successful schooling outcomes of learners of African descent in Nova Scotia Mitacs-Accelerate Post Doctoral Fellowship Program. Principal supervisor with co-supervisor: Dr. Joyline Makani	$110,000 - includes industry contributions

Mitacs, Canada	March 2021 to October 2026	In collaboration with Celayix. Deep Learning Inspired Profiling, Predictive Analytics and Optimization of Employee Schedules. Mitacs-Accelerate Standard Graduate Research Internship Program Principal supervisor with co-supervisor: Dr. Jiguo Cao	$426,667 - includes industry contributions
Mitacs, Canada	March 2021 to August 2023	In collaboration with Bluelight Analytics Continuous calibration, interpolation and predictive analytics using Machine Learning Mitacs-Accelerate Standard Graduate Research Internship Program	$163,333 - includes industry contributions
Mitacs, Canada	February 2021 to October 2023	In collaboration with Greenstone Building Products. Design Automation and Optimization Using Artificial Intelligence Mitacs-Accelerate Standard Graduate Research Internship Program Co-supervisor with Principal supervisor: Dr. Vijay Mago	$138,664 - includes industry contributions
NRC-IRAP	June 2021 - February 2022	Science and Technology Assistance Program 2 projects: Talem, Area52	$5000*2=$10,000
Mitacs, Canada	July 2020 to December 2021	In collaboration with Agyle Intelligence Inc. Tracking community movements through real-time visualization and predictive analytics to manage the spread of COVID-19	$30,000 - includes industry contributions
Mitacs, Canada	March 2020 to December 2021	In collaboration with Perennia. Integration of Machine Learning and AI Based Optimization from IoT Datastreams and Business Information Systems	$160,000 - includes industry contributions
NSBI	April 2020- February 2021	Productivity and Innovation Voucher Program Four R&D Projects with WINstorm, Bluelight Analytics, Liferaft and EffProp.com	3*$15,000+$25,000=$70,000
NRC-IRAP	June 2020 - February 2021	Science and Technology Assistance Program 5 projects: Bluelight, NxtGen, Dispension, Gradpeek, Celayix	$5000*5=$25,000
Mitacs, Canada	Dec 2019 to Dec 2021	In collaboration with Hanatech Generalized framework for Prescriptive Machine Learning using IoT datastreams.	$160,000 - includes industry contributions
Mitacs, Canada	June 2019 to December 2020	In collaboration with Citco Mitacs-Accelerate Cluster Graduate Research Internship Program Agent Based Auditing of Financial Market Transactions using Deconstructed Deep Learning	$90,000 - includes industry contributions

Mitacs, Canada	June 2019 to December 2021	In collaboration with Missing Link Technologies Mitacs-Accelerate Cluster Graduate Research Internship Program Development of machine learning and artificial intelligence toolbox to monitor data center risks and performance.	$80,000 - includes industry contributions
Mitacs, Canada	October 2019 to November 2021	In collaboration with Ipse Media Mitacs-Accelerate Standard Graduate Research Internship Program Co-supervisor with Principal supervisors: Dr. Steven Smith and Dr. Yasushi Akiyama Designing Student Success: Building a Mobile Application to Improve Student Retention and Persistence	$160,000 - includes industry contributions
Mitacs, Canada	May 2019 to November 2023	In collaboration with Revive Solutions Inc. Mitacs-Accelerate Standard Graduate Research Internship Program Co-supervisor with Principal supervisor: Dr. Vijay Mago Technology Advancement in existing AED	$363,820 - includes industry contributions
NSBI	June 2019- February 2020	Productivity and Innovation Voucher Program Two R&D Projects with EffProp.com and velsoft	$15,000+$25,000 =$40,000
NRC-IRAP	June 2019 - February 2020	Science and Technology Assistance Program Five projects Agyle, WINstorm, Clinical logistics, Dynagen, Elctric Owl:	$5000*5=$25,000
NSERC of Canada	March - December 2018	NSERC Engage Grant (Medical Diagnosis using Raman Spectrographs and Machine Learning)	$25,000
David Sobey Center for Innovation in Retailing and Services	April 2018 to March 2019	Inventory prediction for products with short lifecycles using machine learning	$10,000
Mitacs, Canada	June 2018 to November 2019	In collaboration with Hanatech. Mitacs-Accelerate Cluster Graduate Research Internship Program Visualization of IoT signals and optimization of sampling rate using machine learning.	$80,000 - includes industry contributions
NSBI	June 2018- February 2019	Productivity and Innovation Voucher Program R&D Projects for three companies	$25,000*2+$15,0 00=$50,000
NRC-IRAP	June 2018 - February 2019	Science and Technology Assistance Program Two projects: Environmental Data collection/visualization Offline course management system	$5000*2=$10,000

Mitacs, Canada	May 2018 to October 2019	In collaboration with Clinical logistics Mitacs-Accelerate Cluster Graduate Research Internship Program A fuzzy logic based alert propagation system for temporal tracking of clinical samples	$80,000 - includes industry contributions
Mitacs, Canada	April 2018 to October 2019	In collaboration with HomeExcept Mitacs-Accelerate Cluster Graduate Research Internship Program Classification of human activities and detection of behavioral anomalies using thermopile sensor and machine learning	$80,000 - includes industry contributions
NSERC of Canada	May 2018 to October 2019	Individual Discovery Grant (Recursive and iterative clustering in granular hierarchical, network, and temporal datasets)	$100,000 (Only accessed $80,000 due to surplus)
NSERC of Canada	September 2016 to August 2018	NSERC Collaborative Research Grant (Adaptive Recognition of Time Series of Images for Warehouse Inventory Cataloging)	$60,000 + $22,500 (in kind) (Image processing)
Mitacs, Canada	May 2017 to February 2019	In collaboration with Atlantic Lottery Corporation. Mitacs-Accelerate Graduate Research Internship Program Profiling vendors and products using temporal machine learning	$90,000 - includes industry contributions
Innovacorp	Sept 2017- February 2018	Productivity and Innovation Voucher Program R&D Projects for three companies	$45,000
NRC-IRAP	June 2016 - February 2018	Science and Technology Assistance Program Two projects: Inventory prediction and Medical signal processing	$5000*2=$10,000
Mitacs, Canada	Oct 2017 to May 2018	In collaboration with SimpleBI Mitacs-Accelerate Graduate Research Internship Program Inventory prediction	$30,000 - includes industry contributions
Mitacs, Canada	May 2017 to August 2017	In collaboration with Duguid Consulting. Mitacs-Accelerate Graduate Research Internship Program Searchable Social and Environmental Impact Measurement Database Collaborator: Dr. Daphne Rixon (Professor of Accounting)	$15,000 - includes industry contributions
Atlantic Lottery Corporation	Sept 2016- April 2017	Optimizing Shipping and Handling in Retail	$24,500
Innovacorp	Sept 2016- February 2017	Productivity and Innovation Voucher Program (Probablistics Analysis of Customer Response)	$25,000

NSERC of Canada	September 2015 to February 2016	NSERC Engage Grant (Updating server inventory database through image recognition)	$24,975 (Image processing)
Mitacs, Canada	May 2016 to February 2019	In collaboration with Green Power Laboratories Inc. Mitacs-Accelerate Cluster Graduate Research Internship Program Dynamic clustering of temporally incremental energy consumption patterns in a knowledge cloud	$80,000 - includes industry contributions
Mitacs, Canada	May 2016 to August 2016	In collaboration with Duguid Consulting Mitacs-Accelerate Graduate Research Internship Program (Social and Environmental Impact of Co-operatives) Collaborator: Dr. Daphne Rixon (Professor of Accounting)	$15,000 - includes industry contributions
Innovacorp	Sept 2015- February 2016	Productivity and Innovation Voucher Program Gamified recommender system, with Dr. Oore	$15,000
NRC-IRAP	June 2015 - February 2017	Science and Technology Assistance Program Four projects: image processing, microprocessor scripting, music retrieval (with Dr. Oore), 3D scanning & printing, text-mining of counselling system	$5000*5=$25,000
Mitacs, Canada	May 2015 to January 2016	In collaboration with Atlantic Canada Opportunities Agency, Canada, and PACTA, Inc. Mitacs-Accelerate Graduate Research Internship Program Automated text mining and analysis of business contracts	$30,000 - includes industry and ACOA contributions
Munich University of Applied Sciences	July 2015	International Faculty Mobility grant - Approximately valued at $6000 (including travel and accommodations)	$6000
NSERC of Canada	April 2007 to March 2013	Individual Discovery Grant	$70,000 ($14,000/year)
Indian Institute of Technology Gandhinagar	Dec 2012 - May 2012	Visiting professor	$12,000 (Travel and accommodations)
University Grants Commission of India	Awarded for: June 2010 to June 2012	Actual duration: Dec 2010 - May 2011. Scholar-in-residence at SRTM University, Nanded Up to Rs. 2,160,000 (Approx. $50,000) for two years. Prorated to: $10,000 for the actual duration	Rs. 2,160,000
CFI Leading Edge Fund	2009	One of 9 principal investigators and 12 total co-applicants; A. East lead PI from Univ. of Regina	$506,647

Govt. of Nova Scotia	May 2001 to August 2001	Summer Student Employment Subsidy	Approximate value: $3000
NSERC of Canada	April 2003 to March 2007	Individual Research Grant	$48,000 ($12,000/year)
NSERC of Canada	April 2000 to March 2003	Individual Research Grant	$30,000 ($10,000/year)
NSERC of Canada	April 1996 to March 2000	Individual Research Grant ($10,000/year) (increased to $11550)	$42,550
Shastri Indo-Canadian Institute	1997 - 1998	Faculty Research Fellowship: Travel and Research Expenses	Approx. value $6000
NSERC of Canada	April 1993 to March 1996	Individual Research Grant	$30,000 ($10,000/year)
NSERC of Canada	March 1994	Equipment grant	$24,445
Faculty of Graduate Studies and Research Saint Mary's University	1998 – till date	Research grants for students	Average $2000/year
Faculty of Graduate Studies and Research Saint Mary's University	2008 – till date	International conference travel grants	Average $1000 biannual