RESUME

Pawan J. Lingras

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Education

Ph.D. in Computer Science (1991) **M.Sc. in Computer Science (1988)** **M.Sc. in Civil Engineering (1986)**	University of Regina, Regina, Saskatchewan, Canada, S4S 0A2
B. Tech., Civil Engineering (1984)	Indian Institute of Technology Bombay, Mumbai, India, 400076.

Academic and Research Work Experience *(Administrative positions listed separately)*

Professor: September 2002 to date **Associate Professor:** August 1998 to August 2002	Department of Mathematics and Computing Science Saint Mary's University, Nova Scotia, Canada, B3H3C3
Associate Professor: July 1994 to June 1998 **Assistant Professor:** July 1991 to June 1994	Department of Computer Science Algoma University, Sault Ste. Marie, Ontario, P6A 2G4
Visiting Professor: 2012	Indian Institute of Technology, Gandhinagar, India

UGC-India Scholar in residence at SRTM University, Nanded (2011)

Indian Statistical Institute, Kolkata (2011)

Shastri Indo-Canadian Institute Scholar (1997/98)

Administrative Contributions *(All at Saint Mary's University, Halifax, Canada)*

Founding Director September 2014 to date	M.Sc. in Computing and Data Analytics
Chair September 2004 to August 2007	Department of Mathematics and Computing Science
Coordinator September 2007 to December 2010	M.Sc. in Applied Science
Coordinator 2007/08, 2014	Computing Science and Business Administration
Director December 2006 to December 2010	Diploma in Business Administration and Computing Science The Gambia - A joint venture with SMU, University of the Gambia, QuantumNet Institute of Technology

Summary of List of Publications (http://cs.smu.ca/~pawan/research/lingrasListOfPublications.pdf)

Refereed Journal Articles:	66
Refereed Book Chapters:	12
Textbooks:	3
Edited Books:	2
Edited Volumes:	14
Submitted to Journals for Publication:	2
Refereed Conference Proceedings:	132
Non-Refereed Conference Proceedings:	9
Other Non-Refereed Publications:	6
Total	**246**
Invited talks	**51**

Research Student Supervision (http://cs.smu.ca/~pawan/research/lingrasListOfStudents.pdf)

Post-doctoral students:	2
Ph.D. students (including three visiting scholars):	13
M.Sc. students:	108 (15 theses, 93 projects)
B.Sc. students (thesis option):	12
B.Sc. students (non-thesis option):	36
Total	**171**

- Supervised graduate students from three Canadian universities: Saint Mary's University, University of Regina, and Dalhousie University
- Co-supervised and co-supervising four visiting doctoral students from Egypt, China, and Tunisia.
- Served as the external examiner for doctoral theses from Dalhousie University, Singapore, Australia, and India; and M.Sc. theses from Acadia University, Wolfville, Nova Scotia, Lakehead University, Thunderbay, Ontario, Memorial University, Newfoundland and Labrador.

Research Grants (Pedagogical projects funded by SMU are listed separately)

(Details: http://cs.smu.ca/~pawan/research/lingrasResearchGrants.pdf)

Thematic Summary of Research Funding

Total research funding (Fundamental and Industry): $5M+

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 totaling $3.5M since 2016
- A number of 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 (66), refereed conference proceedings (132), edited volumes (12), and textbooks (3) - publication list is separately available.
- Supervised 171 research students (2 PDF, 13 Ph.D., 108 Master's, 48 UG)

Industry sponsored research
- Total funding since May 2015: $4.2M+
- Collaborated with seven other researchers
- Collaborated with thirty companies
- Four major funding agencies (Mitacs $3.5M, NSERC $660K, NRC-IRAP $95K, NSBI $315K)
- 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

Curriculum Development and Accreditation Activities

- Developed and implemented a M.Sc. in Computing and Data Analytics program from 2010/11 to date. It is the first professional graduate program in the Faculty of Science. Contributions include curriculum development, budgeting, communicating with the faculty, administration, financial services, industry, international recruiters, and preparation of the MPHEC proposal. The program has grown from 17 students in 2015/16 to 47 students in 2017/18. The enrollment in 2018/19 is expected to be 70 students – four-fold growth in four years. The program is well received by the industry with 100% employment rate in the last graduated cohort from 2016/17 before graduation.
- Initiated the proposal process of the Ph.D. in Applied Science program in Fall 2010. Contributions include identifying the process, getting approval from the Faculty of Council for preparation of the MPHEC proposal, putting together structure of the document, providing necessary statistical information that will make up a significant portion of the proposal.
- Coordinated the first comprehensive review of the M.Sc. in Applied Science program in 2009/10. The review process was very well received by the external reviewers. The result of the review is facilitating major changes to the program structure and delivery. The review also led to a recommendation from the external reviewers to develop and implement the Ph.D. in Applied Science program.
- Coordinated the concept document for the Ph.D. in Applied Science program and presented it to the Faculty of Science in 2008/09. Formulated the strategy for developing the Ph.D. program and embarked on the review of the M.Sc. in Applied Science program.
- As the Chair of the Department of Mathematics and Computing Science, participated in the accreditation of Computing Science programs by Canadian Information Processing Society in 2005.
- Chair of the Accreditation Committee of M.Sc. in Information Technology Management, Hong Kong Baptist University in 2006.
- Active participant in curriculum development of the Computing Science program at Saint Mary's University.
- Instrumental in getting the four-year B.Sc. program at Algoma University.

Classroom Teaching

- Have taught more than 100 courses since 1987 in Computing Science, Mathematics, and Applied Science at Saint Mary's University, Algoma University, and University of Regina.
- Have received above average teaching evaluations in most courses.
- Have taught at all four undergraduate levels, as well as at the graduate level.
- The range of courses includes: Introduction to Computing Science (I&II), Data Structures (I&II), Operating Systems, Principles of Programming Languages, Theoretical Computing Science (I&II), Artificial Intelligence, Data Mining, Information Retrieval, Discrete Mathematics, and Graduate Seminar.
- The list of programming languages includes: C, C++, Java, Pascal, Object Pascal, Lisp, Prolog, COBOL, FORTRAN, C#, and SQL. Also use scripting languages, such as PHP and Perl.
- First to use LIVE online teaching service at Saint Mary's University. Taught "Introduction to Computing Science" to high school teachers throughout Nova Scotia in 2006/07 and 2008/09. The delivery was very well received by the high school teachers.
- Used a wide variety of teaching methodologies, which include moderation through e-mail, LIVE online teaching, and collaborated teaching to ensure delivery of eight courses in the Gambia.

Computing Science Huskies

- Primary coach and cheerleader from 1999/2000 to 2010/11.
- The team won eight Atlantic Canadian Championships (1999-2000, 2002-2003, 2007-2010) and four runner-up positions (2001, 2004, 2005, 2006).
- Most first and second place finishes in Atlantic Canada.
- Advanced to the North Eastern North America regional finals for thirteen straight years (starting in 1998), becoming the only Canadian team east of Ontario to do so. The only other teams who made it to the regional finals in each of last eleven years are M.I.T. and Harvard.
- First Atlantic Canadian team to advance to the World Finals (Hawaii, 2002) by beating everyone except M.I.T. at the regional finals in November 2001.
- Organized all the practice sessions, including problem selection and evaluation process.
- Built a mentoring system for students from first year to final year.
- Accompanied students to most of the competitions.
- The training helped everyone reach their full potential. Some of the high quality programming talent managed to fit into the conventional university culture, and prosper in computing science.
- Designed and implemented an automated teaching evaluation system at Algoma University, when the University switched to new evaluation form. I developed the software and designed the statistical evaluation report in collaboration with the Quality of Teaching Committee. It was connected to the overall system by the System Administrator, George Townsend.

High School and International Outreach Activities

- **Hack-a-week:** Founded a week long app development competition for high school and university students
- **High School Programming Competition**: Organizer of 2002 and 2008 competitions, and active member in all ten years of the competition in various capacities.
- **High School Teacher Workshops**: Organized first two teacher workshops on computer programming in 2003 and 2004.
- **International outreach activities for student mobility and recruitment:** Hong Kong Baptist University, Vejle Business College, Denmark, University of Moratuwa, Ansal Institute of Technology, India, SIBER, India.
- **Director of Diploma in Business Computing in the Gambia:** Worked with Gambian partners to develop an appropriate curriculum; design program delivery based on an instructor/moderator model and put together instructor/moderator pairs from Canada (SMU & Acadia), the Gambia, USA, India, Taiwan, Sweden, and Denmark.

Projects in Support of Pedagogy

- Lead developer for the first iPhone pedagogical application at Saint Mary's University.
- Consultant for the Second Life project undertaken by the Division of Continuing Education.
- Multi-speaker ViaScribe: Supervised a team of three Saint Mary's University students (Tokuyo Mizuhara, Vagarro Willie, Chris Adams) that extended the class notes transcription software developed by the Liberated Learning Consortium for a conference environment. The extension was well received by the sponsors. However, we do not have the necessary hardware in the classroom to record multiple speakers at this time, so it is not in active use.
- NoteFinder: A search engine that works with the Liberated Learning's transcription service. The software works with key-phrases as well as keywords. It also creates an index of associated terms discussed during the entire course. (Designed the algorithm and supervised the implementation by: Jason Hines and Stuart

Crosby).

- Automated feedback system: The system allows students to submit feedback for presentations by their peers. The presenter sees a compiled version of the anonymous feedback. The feedback system was based on a feedback process practiced by one of the AAU Teaching Award Winners. Our automated system has been in use for five years in a graduate seminar course. The system was developed by two students, Ineacho Ogarro and Vagarro Willie, under my supervision.

Other Relevant Professional Experience

- NSERC Computer Science Evaluation Group member (2016/17, 2018/19, 2019/20)
- Editorial Board: Web Intelligence and Agent Systems: An International Journal (WIAS)
- Editorial Board: Transaction of Rough Sets, Springer publication
- Editorial Board: International Journal of General Systems
- Co-chair: Second (2009), and Third (2011) Indian International Conferences on Artificial Intelligence.
- Associate Editor and Program Committee Co-chair: Second (2005), and Third (2007) Indian International Conferences on Artificial Intelligence.
- Program Co-chair: IEEE/WIC/ACM International Joint Conferences on Web Intelligence and Intelligent Agent Technology for 2008 and 2012.
- General Workshop Chair: Fifth IEEE International Conference on Data Mining 2005 and IEEE/WIC/ACM International Joint Conference on Web Intelligence and Intelligent Agent Technology for 2004 and 2005.
- General Tutorial Co-Chair: IEEE/WIC/ACM International Joint Conference on Web Intelligence and Intelligent Agent Technology for 2004 and 2005.
- Reviewer of several computing science journals including IEEE Transactions on Knowledge and Data Engineering, Pattern Recognition Letters, Information Sciences, International Journal of Intelligent Information Systems.
- Reviewer for NSERC grant applications

Awards and Scholarships

Textbook Author Association	Most promising textbook, 2018
Saint Mary's University	President's Award for Excellence in Research, 2016
Indian Society for Rough Sets	Distinguished service award, 2014
Saint Mary's University	Student Union: Faculty of Science, Excellence in Teaching, 2013
Saint Mary's University	Father William A. Stewart, S.J., University Medal for Excellence in Teaching, 2009
University of Regina.	Gerhard Herzberg Fellowships

Various merit scholarships from Government of Saskatchewan, Federal and State Governments in India

Research Funding
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Chronological Summary of Research Funding			
Funding Agency	**Funding Period**	**Funding Details**	**Funding Awarded**
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
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 in 2018/19 - extended duration to 2025)	$204,000 ($34,000/year for 6 years)
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+$15,000=$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

List of Research Students

Post-doctoral students:	2
Ph.D. students (including two visiting scholars):	13
M.Sc. students:	108 (15 theses, 93 projects)
B.Sc. students (thesis option):	12
B.Sc. students (non-thesis option):	36
Total	**171**

Post-doctoral students (Total 2)

1. Kadam, R. (2021-23) Post-doctoral fellow (Saint Mary's University), Co-supervision with Dr. Joyline Makani, Evidence-driven strategies for successful schooling outcomes of learners of African descent in Nova Scotia.

2. Joshi, M. (2009) Post-doctoral fellow (University of New Brusnwick), Temporal association mining.

Ph.D. students (Total 13)

1. Neveditsin, N. (2023-date) Ph.D. (Saint Mary's University) Co-Supervisor with Dr. Vijay Mago. Domain-specific applications of language models.

2. Chavan, S. (2020-date) Ph.D. (Symbiosis International (Deemed University)) Co-supervisor with Dr. Preeti Mulay. Design, Development and Implementation of Quantum Incremental Clustering Algorithm Framework for Exploration of Unsupervised Data.

3. Chandrasekaran, D. (2021-2022) Ph.D. (Saint Mary's University) Co-Supervisor with Dr. Vijay Mago Ethics in Natural Language Processing, Withdrew without completion.

4. Fisher, A. (2021-date) Ph.D. (Saint Mary's University) Co-Supervisor with Dr. Vijay Mago Design Automation and Optimization Using Artificial Intelligence.

5. Rao, G. (2019-date) Ph.D. (Saint Mary's University) Co-Supervisor with Dr. Vijay Mago, Technology Advancement in existing AED.

6. Ghamari, R. (2018-2019 leave of absence) Ph.D. (Saint Mary's University) Supervisor Soft clustering to improve engineering optimization.

7. Liu, G. (2018-2019 did not finish) Ph.D. (Saint Mary's University) Supervisor Two-stage data mining by using clustering to improve classification and association.

8. Naik, S. (2017-date) Ph.D. (National Institut of Technology, Goa, India) Co-supervisor Extreme and Deep Learning for Image Recognition.

9. Ammar, A. (2011-2016) Ph.D. (Larodec, Institut Superier de Gestion de Tunis, Tunisia) Co-supervisor Possibilistic Rough K-Modes.

10. Trabelsi, S. (2008-2011) Ph.D. (Larodec, Institut Superier de Gestion de Tunis, Tunisia) Co-supervisor Belief rough set classifier.

11. Chen, Min (2008-2009) Ph.D. (Tongji University, Shanghai, China) Visiting student-collaborator on joint publications, Soft and Crisp Cluster Quality based on Cost-benefit Analysis.

12. Hogo, M. (2002-2005) Ph.D. (Czech Tech. University) Visiting student-collaborator on joint publications, Temporal variations in interval clusters obtained from Kohonen self-organizing maps.

13. Zhong, M. (2000-2004) Ph.D. (University of Regina), Missing value analysis in traffic engineering.

M. Sc. students (Total 108)

Thesis: 15, projects: 93

1. Alapatt, John J. (May 2023 - December 2023) M.Sc. (Saint Mary's University) Supervisor
Project: Machine Learning at Acuicy

2. Dalal, Shweta (May 2023 - December 2023) M.Sc. (Saint Mary's University) Supervisor
Project: Machine Learning at Citco

3. Mascarenhas, Rishan D. (May 2023 - December 2023) M.Sc. (Saint Mary's University) Supervisor
Project: Machine Learning at Citco

4. Prabhakar, Shiney (May 2023 - December 2023) M.Sc. (Saint Mary's University) Supervisor
Project: Machine Learning at NS Power

5. Singh, Amanpreet (May 2023 - December 2023) M.Sc. (Saint Mary's University) Supervisor
Project: Machine Learning at Acuicy

6. Singh, Kamaljeet (May 2023 - December 2023) M.Sc. (Saint Mary's University) Supervisor
Project: Machine Learning at NS Power

7. Srinivasan, Hemalatha (May 2023 - December 2023) M.Sc. (Saint Mary's University) Supervisor
Project: Machine Learning at Meraki

8. Wadhwa, Sharlene K. (May 2023 - December 2023) M.Sc. (Saint Mary's University) Supervisor
Project: Machine Learning at NS Liquor Corporation

9. Altaf, Rehnuma (May 2022 - December 2022) M.Sc. (Saint Mary's University) Supervisor
Project: Retail Analytics

10. Bana, Prashant (May 2022 - December 2022) M.Sc. (Saint Mary's University) Supervisor
Project: Social Media Analytics

11. Joshi, Advait R. (May 2022 - December 2022) M.Sc. (Saint Mary's University) Supervisor
Project: Social Media Analytics

12. Katharotiya, Pratik Kanubhai (May 2022 - December 2022) M.Sc. (Saint Mary's University) Supervisor
Project: Student Success Analytics

13. Murali, Prabav (May 2022 - December 2022) M.Sc. (Saint Mary's University) Supervisor
Project: Financial Portfolio Analytics

14. Murthy, Tanmaya (May 2022 - December 2022) M.Sc. (Saint Mary's University) Supervisor
Project: Deep Learning Tools Development

15. Pampatwar, Pandurang Anil (May 2022 - December 2022) M.Sc. (Saint Mary's University) Supervisor
Project: Financial Portfolio Analytics

16. Panchal, Harsh Rasiklal (May 2022 - December 2022) M.Sc. (Saint Mary's University) Supervisor
Project: Healthcare Analytics

17. Singh, Karnjot (May 2022 - December 2022) M.Sc. (Saint Mary's University) Supervisor
Project: Student Success Analytics

18. Su, Qing (May 2022 - December 2022) M.Sc. (Saint Mary's University) Supervisor
Project: Healthcare Analytics

19. Vaidya, Parth Tarak (May 2022 - December 2022) M.Sc. (Saint Mary's University) Supervisor
Project: Electricity Distribution Analytics

20. Varasadiya, Viren Vinubhai (May 2022 - December 2022) M.Sc. (Saint Mary's University) Supervisor
Project: Electricity Distribution Analytics

21. Gnanavel, Praveen Kumar (August 2021 - April 2022) M.Sc. (Saint Mary's University) Supervisor

Project: Machine learning at Perennia

22. Krishnan, Anoop (August 2021 - April 2022) M.Sc. (Saint Mary's University) Supervisor
Project: Machine learning at NxtGen

23. Kulathu, Rajshekar (August 2021 - April 2022) M.Sc. (Saint Mary's University) Supervisor
Project: Machine learning at Bluelight

24. Li, Wenshuo (August 2021 - April 2022) M.Sc. (Saint Mary's University) Supervisor
Project: Machine learning at SafePath

25. Mashalkar, Akshaykumar (August 2021 - April 2022) M.Sc. (Saint Mary's University) Supervisor
Project: Machine learning at CRA

26. Patel, Mitkumar B. (August 2021 - April 2022) M.Sc. (Saint Mary's University) Supervisor
Project: Machine learning at Citco

27. Reginold, Fabian Vaniyamveetil (August 2021 - April 2022) M.Sc. (Saint Mary's University) Supervisor
Project: Machine learning at Lexington

28. Roy, Akhil (August 2021 - April 2022) M.Sc. (Saint Mary's University) Supervisor
Project: Machine learning

29. Santhanam, Hemavathi (August 2021 - April 2022) M.Sc. (Saint Mary's University) Supervisor
Project: Machine learning at Citco

30. Sekar, Ramya (August 2021 - April 2022) M.Sc. (Saint Mary's University) Supervisor
Project: Machine learning at Agyle

31. Tayal, Shivani (August 2021 - April 2022) M.Sc. (Saint Mary's University) Supervisor
Project: Machine learning at Citco

32. Gupta, Samarth (May 2020 - December 2020) M.Sc. (Saint Mary's University) Supervisor
Project: Machine learning in fiancial trading at Citco

33. Dhillon, Jagwinder Kaur (May 2020 - December 2020) M.Sc. (Saint Mary's University) Supervisor
Project: Internet Of Things Research at Perennia

34. Hardat, Anshul (May 2020 - December 2020) M.Sc. (Saint Mary's University) Supervisor
Project: Internet Of Things Research at Perennia

35. Katragadda, Vidhyadhara Teja (May 2020 - December 2020) M.Sc. (Saint Mary's University) Supervisor
Project: Internet Of Things Research at Perennia

36. Khadka, Bijay (May 2020 - December 2020) M.Sc. (Saint Mary's University) Supervisor
Project: Data visualization and machine learning of student demographics and success

37. Mahajan, Jatin (May 2020 - December 2020) M.Sc. (Saint Mary's University) Supervisor
Project: Machine learning in fiancial trading at Citco

38. Poddar, Ashit (May 2020 - December 2020) M.Sc. (Saint Mary's University) Supervisor
Project: Internet Of Things Research at Perennia

39. Santhosh Jaya, Abhijith (May 2020 - December 2020) M.Sc. (Saint Mary's University) Supervisor
Project: Internet Of Things Research at Perennia

40. Suthar, Aastha K. (May 2020 - December 2020) M.Sc. (Saint Mary's University) Supervisor
Project: Internet Of Things Research at Perennia

41. Yeolekar, Saurabh S. (May 2020 - December 2020) M.Sc. (Saint Mary's University) Supervisor
Project: Internet Of Things Research at Perennia

42. Kadamgode Puthenveedu, Sabareeshnath (August 2020 - March 2021) M.Sc. (Saint Mary's University) Supervisor

Project: Machine learning in fiancial trading at Citco

43. Morishetty, Manoj K. (August 2020 - March 2021) M.Sc. (Saint Mary's University) Supervisor
Project: Internet Of Things Research at Hanatech

44. Tandon, Aditya (August 2020 - March 2021) M.Sc. (Saint Mary's University) Supervisor
Project: Machine learning in fiancial trading at Citco

45. Nomula, Rahul (August 2020 - March 2021) M.Sc. (Saint Mary's University) Supervisor
Project: Machine learning platform development at Missing Link Technologies

46. Bandyopadhyay, Parijat (August 2020 - March 2021) M.Sc. (Saint Mary's University) Supervisor
Project: Machine learning in fiancial trading at Citco

47. Campbell, Jessica (August 2020 - March 2021) M.Sc. (Saint Mary's University) Supervisor
Project: Effect of free trade on business opportunities

48. Bommu, Goutham (August 2020 - March 2021) M.Sc. (Saint Mary's University) Supervisor
Project: Internet Of Things Research at Hanatech

49. Jain, Sachit (August 2020 - March 2021) M.Sc. (Saint Mary's University) Supervisor
Project: Machine learning platform development at Missing Link Technologies

50. Ahuja, Bhavya (May 2019 - December 2019) M.Sc. (Saint Mary's University) Supervisor
Project: Inventory Management System - Data Visualization

51. Cai, Qian (May 2019 - December 2019) M.Sc. (Saint Mary's University) Supervisor
Project: Inventory Management System - Predictive Analytics

52. Gupta, Ankush (May 2019 - December 2019) M.Sc. (Saint Mary's University) Supervisor
Project: Data Visualization at Hanatech

53. Manivannan, Santhamohan (May 2019 - December 2019) M.Sc. (Saint Mary's University) Supervisor
Project: Data Visualization at Hanatech

54. Durgam, Narasimha Rao (May 2019 - December 2019) M.Sc. (Saint Mary's University) Supervisor
Project: Data Visualization at Hanatech

55. Magray, Shahzan (May 2019 - December 2019) M.Sc. (Saint Mary's University) Supervisor
Project: Inventory Management System - Business Analysis

56. Nomula, Rahul (May 2019 - December 2019) M.Sc. (Saint Mary's University) Supervisor
Project: Business Analytics and Machine Learning at Missing Link Technologies

57. Oberoi, Ravneet Singh (May 2019 - December 2019) M.Sc. (Saint Mary's University) Supervisor
Project: Inventory Management System - Quality Assurance

58. Punnoli, Sreeraj (May 2019 - December 2019) M.Sc. (Saint Mary's University) Supervisor
Project: Predictive Analytics at SimpleBI

59. Vadsaria, Sonam M. (May 2019 - December 2019) M.Sc. (Saint Mary's University) Supervisor
Project: Business analytics at Nova Scotia Power

60. Verma, Bharat Bhushan (May 2019 - December 2019) M.Sc. (Saint Mary's University) Supervisor
Project: Machine learning at Dilytics

61. Govindan, Vinay (May 2019 - December 2019) M.Sc. (Saint Mary's University) Supervisor
Project: Machine learning at HomeExcept

62. Eslami, Arsalan (May 2018 - date) M.Sc. (Saint Mary's University) Supervisor
Project: Real Estate Analytics

63. Abdrashitov, Ildar (Sept 2018 - Apr 2019) M.Sc. (Saint Mary's University) Supervisor
Project: Data Analytics at Missing Link Technologies

64. Arantes, Daniel d. (Sept 2018 - Apr 2019) M.Sc. (Saint Mary's University) Supervisor
Project: Data Analytics at Atlantic Lottery

65. Bhagat, Sankalp K. (Sept 2018 - Apr 2019) M.Sc. (Saint Mary's University) Supervisor
Project: Real Estate Analytics

66. Cornish, Aaron (Sept 2018 - Apr 2019) M.Sc. (Saint Mary's University) Supervisor
Project: Human Resources Analytics at JDI Saint John

67. Dsouza Bhatt, Divya M. (Sept 2018 - Apr 2019) M.Sc. (Saint Mary's University) Supervisor
Project: Human Resources Analytics at JDI Saint John

68. Govindaraj, Dinesh Kumar (Sept 2018 - Apr 2019) M.Sc. (Saint Mary's University) Supervisor
Project: Machine learning and Analytics at HomeExcept

69. LaPlante, Jennifer (Sept 2018 - to date) M.Sc. (Saint Mary's University) Supervisor
Project: TBD

70. Malone, Duane (Sept 2018 - to date) M.Sc. (Saint Mary's University) Supervisor
Project: Churn Analysis at Atlactic Lottery and Day trading Analytics

71. Maruf, Md. Wahid Tausif (Sept 2018 - Apr 2019) M.Sc. (Saint Mary's University) Supervisor
Project: Data Visualization at HomeExcept

72. McCavour, Chris (Sept 2018 - Apr 2019) M.Sc. (Saint Mary's University) Supervisor
Project: Human Resources Analytics at JDI Saint John

73. Vechoor Padmanabhan, Lourdes R. (Sept 2018 - Apr 2019) M.Sc. (Saint Mary's University) Supervisor
Project: Data Visualization of IoT stream at Hanatech

74. Weston, Joshua (Sept 2018 - Apr 2019) M.Sc. (Saint Mary's University) Supervisor
Project: Data Analtyics at JDI Moncton

75. Yin, Yifan (Sept 2018 - Apr 2019) M.Sc. (Saint Mary's University) Supervisor
Project: Web and Data Analytics for NGO and Tencent

76. Singh, Yudhvir (Sept 2018 - Apr 2019) M.Sc. (Saint Mary's University) Supervisor
Project: Machine learning for IoT Datastreams at Hanatech

77. MacDonald, R. (May 2017 - August 2018) M.Sc. (Saint Mary's University) Supervisor
Thesis: Estimating type and number of faults in software development using machine learning.

78. Malloy, C. (May 2017 - date) M.Sc. (Saint Mary's University) Supervisor
Thesis: Comparison of deep learning and sequential unsupervised and supervised learning.

79. Shah, M. (January - June 2018) M.Sc. (Saint Mary's University) Supervisor
Machine learning for image recognition.

80. Padelkar, P. (January - May 2018) M.Sc. (Saint Mary's University) Supervisor
Machine learning for image recognition.

81. Kaur, N. (May - December 2018) M.Sc. (Saint Mary's University) Supervisor
Medical diagnosic system.

82. Akash, N. (October 2017 - May 2018) M.Sc. (Saint Mary's University) Supervisor
Analysis and visualization of first call resolution.

83. Kalita, A. (Oct - Dec 2017) M.Sc. (Saint Mary's University) Supervisor
M.Sc. project: Inventory prediction

84. Zhang, Z. (May - October 2017) M.Sc. (Saint Mary's University) Supervisor
M.Sc. project: Correlating enrollment and gaming behaviour with machine learning.

85. Mullick, S. (May 2017 - date) M.Sc. (Saint Mary's University) Supervisor

M.Sc. project: Predicting gaming behaviour with machine learning.

86. Acosta Vidales, A. (May 2017 - date) M.Sc. (Saint Mary's University) Supervisor
M.Sc. project: Searchable Social and Environmental Impact Measurement Database.

87. Mahajan, K. (May 2017 - date) M.Sc. (Saint Mary's University) Supervisor
M.Sc. project: Data Warehousing and Prediction of Missing Values of Weather Data.

88. Karunakaran, V. (May 2017 - date) M.Sc. (Saint Mary's University) Supervisor
M.Sc. project: Matching JSON representations using text mining and preference ratings.

89. Bahri, M. (January - December 2016) M.Sc. (Larodec, Institut Superier de Gestion de Tunis, Tunisia) Co-supervisor
Thesis: Clustering data stream in a belief function framework.

90. Gopinath, R. (Sept 2016 - date) M.Sc. (Saint Mary's University) Supervisor
M.Sc. project: Optimizing shipping and handling in retail

91. Kotiya, A. (Sept 2016 - date) M.Sc. (Saint Mary's University) Supervisor
M.Sc. project: Detecting unusual patterns in time-series.

92. Pavlovski, I. (May-December 2016) M.Sc. (Saint Mary's University) Supervisor
M.Sc. project: Developing decision trees in knowledge cloud

93. Liu, Z. (May-December 2016) M.Sc. (Saint Mary's University) Supervisor
M.Sc. project: Dynamic clustering in a knowledge cloud

94. Mohammadi, M. (May-December 2016) M.Sc. (Saint Mary's University) Supervisor
M.Sc. project: Social and Environmental Impact of Co-operatives

95. Aldabaa, F. (May-December 2016) M.Sc. (Saint Mary's University) Supervisor
M.Sc. project: Social and Environmental Impact of Co-operatives (UI/UX)

96. Singh, G. (May-December 2016) M.Sc. (Saint Mary's University) Supervisor
M.Sc. project: Social and Environmental Impact of Co-operatives (Database)

97. Thompson, J. (2013-2016) M.Sc. (Saint Mary's University) Supervisor
Thesis: Monitoring Regional Power Generation and Consumption.

98. Suteanu, M. (2010-2014) M.Sc. (Saint Mary's University) Supervisor
Thesis: A Network-Based Approach to Earthquake Pattern Analysis

99. Heider, F. (2013-2014) M.Sc. (Saint Mary's University) Supervisor
Thesis: Temporal meta-clustering.

100. Sun, W. (2012-2015) M.Sc. (Saint Mary's University) Supervisor
Thesis: Classification of Temporal Events.

101. Penny, D. (2008-2012) M.Sc. (Saint Mary's University) Supervisor
Thesis: Oceanographic data management using LOBOviz.

102. Zhang, P. (2008-2010) M.Sc. (Saint Mary's University) Supervisor
Thesis: Inventory management using data mining: forecasting in retail industry.

103. Mizuhara, T. (2006-2009) M.Sc. (Saint Mary's University) Supervisor
Thesis: Modeling and evaluation of knowledge discovery in wholesale and retail industry.

104. Yan, R. (2002-2004) M.Sc. (Saint Mary's University) Supervisor
Thesis: Spatial and temporal data mining in a supermarket.

105. Xiao, Y. (1999-2000) M.Sc. (Dalhousie University) Co-supervisor
Thesis: A framework for discovering patterns and trends in asthma data.

106. Gopalkrishnan, S. (1998-2000) M.A.Sc. (University of Regina) Co-supervisor

Thesis: Prediction of short-term traffic volumes for applications in intelligent transportation systems.

107. Kalyar, I. (1997-1998) M.A.Sc. (University of Regina) Co-supervisor
Thesis: Short-term predictions of traffic on recreational roads.

108. Fei, X (1996-1998) M.A.Sc. (University of Regina) Co-supervisor
Thesis: Estimation of AADT using neurocomputing.

B.Sc./B.Tech students thesis option (Total 12)

1. Kapoor G (2016-2017) B.Sc. (Co-supervisor). Estimating Pore Fluid Saturation in an Oil Sands Reservoir using Ensemble Tree Machine Learning Algorithms

2. Glavin Wiechert (2015-2016) B.Sc. Identifying Users and Activities from Brain Wave Signals Recorded from a Wearable Headband

3. Rathinavel, K. (2011-2012) B.Tech. (Indian Institute of Technology, Gandhinagar), Recursive Clustering of Mobile Phone Users.

4. Nagrecha, S. (2011-2012) B.Tech. (Indian Institute of Technology, Gandhinagar), Comparison of Gene Coexpression and Bayesian Networks.

5. McLearn, G. (1998-1999) B.Sc, Neural network based agents for web searching.

6. Osborne, P (1996-1997) B.Sc. (Algoma University), Time-delay neural networks for traffic modeling.

7. Mannella, R. (1996-1997) B.Sc, Predictions of demand for electricity.

8. Lima, L. (1996-1997) B. Sc. (Algoma University), System analysis of an educational intranet.

9. Thompson, D. (1995-1996) B.Sc. (Algoma University, Supervisor), Traffic prediction using neural networks.

10. Adamo, M. (1994-1995) B.Sc. (Laurentian University, Supervisor), Neural net and Statistical time series modeling.

11. Calcagnini, C. (1993-1994) B.Sc. (Laurentian University, Supervisor), Comparison of neural net and statistical models.

12. Dale, B. (1993-1994) B.Sc. (Laurentian University, Supervisor), Interface development for a traffic information system.

B.Sc./B.Tech. students non-thesis option (Total 36)

1. Pandey, B (May-Aug 2018) Medical diagnostic system.

2. Morgan, L-A. (May 2016-April 2017) Prioritized Sampling Using Clustering Ensemble.

3. Dua, D. (May-December 2016) Dynamic Clustering Assignments

4. Peter Lakner (May-Aug 2015) Optimizing plant settings using genetic algorithms, unsupervised, supervised learning

5. Zhiyun Zhong (Jan-Apr 2015) Identifying Users and Activities from Brain Wave Signals Recorded from a Wearable Headband

6. Shuai Zhao (Jan-Apr 2015) Identifying Users and Activities from Brain Wave Signals Recorded from a Wearable Headband

7. Runxing Zhou (Jan-Apr 2015) Identifying Users and Activities from Brain Wave Signals Recorded from a Wearable Headband

8. Zhixing Liu (Jan-Apr 2015) Identifying Users and Activities from Brain Wave Signals Recorded from a Wearable Headband

9. Zhicheng Yin (Jan-Apr 2015) Identifying Users and Activities from Brain Wave Signals Recorded from a

Wearable Headband

10. Vaswani, S. (May-August 2013) Business Intelligence in Retail
11. de Coelho, V. (May-August 2013) Business Intelligence in Retail
12. Kallada, M. (September 2013 - date) Temporal Data Mining.
13. Jain, S. (May-December 2013) Monitoring Thyroid Cancer Patients.
    App Development for Halifax Regional Municipality Data.
14. Triff, M. (May 2013 - April 2014) Meta-clustering and mobile app development.
15. Kallada, M. (August 2013 - date) Classification and clustering of temporal image stream data.
16. Simmons, J. (October 2013 - date) App Development for Halifax Regional Municipality Data.
17. Jong, M. (October 2013 - date) App Development for Halifax Regional Municipality Data.
18. Paravia, R. (May 2013 - Sept 2013) Monitoring Thyroid Cancer Patients.
19. Rajaraman, D. (May 2013 - Sept 2013) Monitoring Thyroid Cancer Patients.
20. Bhayani, S. (May 2013 - August 2013) Monitoring Thyroid Cancer Patients.
21. Agarwal, S. (2012). (National Institute of Technology, Surat, India), Association and Correlation between Temporal Patterns.
22. Reddy, V. (2012). (Indian Institute of Technology, Bombay), Clustering and Classification of Temporal Patterns.
23. Lowry, E. (2007-08). Developing Lecture Transcriptions in Flash Format.
24. Blades, W. (2007-08), Evolutionary Logit Models.
25. Willie, V. (2006-07), Multispeaker Transcription.
26. Adams, C. (2006-07), Multispeaker Transcription.
27. Crosby, W. Summer 2006, Proximity list based information retrieval.
28. Hines, J. Summer 2006, Indexing and searching utility for liberated learning.
29. Jain, A. Summer 2003, Study of attrition of customers.
30. Hogg, A. Summer 2002, Fuzzy loyalty measures for supermarket customers..
31. Xu, J. Summer 2001, Missing value analysis in traffic engineering.
32. MacDonald, S. Summer 2001, Loyalty of supermarket customers.
33. West, C. Summer 2001, Loyalty of supermarket customers.
34. Mountford, P. Summer 2000, Time-series predictions using GAs designed Neural Networks.
35. Huang, X. Summer 2000, Study of clustering algorithms.
36. Davies, C. Summer 1999, Rough genetic computing.

List of Publications

Publication Type	No.
Refereed Journal Articles	66
Refereed Book Chapters	12
Textbooks	3
Edited Books	2
Edited Volumes	14
Submitted to Journals for Publication	2
Refereed Conference Proceedings	132
Non-Refereed Conference Proceedings	9
Other Non-Refereed Publications	6
Total	**246**
Invited talks	**51**

Publication Legend

Paper not available

Full paper available

Link to publisher/ DOI

Refereed Journal articles (book chapters listed separately): 66

1. Rao, G., Choudhury, S., Lingras, P., Savage, D. and Mago, V. 2021. AEDNav: Indoor navigation for locating Automated External Defibrillator BMC Medical Informatics and Decision Making, accepted subject to minor revisions.

2. Rao, G., Choudhury, S., Lingras, P., Savage, D. and Mago, V. 2020. SURF: Identifying and allocating resources during Out-of-Hospital Cardiac Arrest, extended version of a conference paper, BMC Medical Informatics and Decision Making, accepted.

3. Yu, H., Chen, Y., Lingras, P., Wang, G. 2019. A Three-way Cluster Ensemble Approach for Large-Scale Data, International Journal of Approximate Reasoning, https://doi.org/10.1016/j.ijar.2019.09.001, pp. 32-49.

4. Lingras, P., Haider, F., Triff, M. 2017. Fuzzy Temporal Meta-clustering of Financial Trading Volatility Patterns. Big Data & Information Analytics, a publication of the American Institute of Mathematical Sciences, Vol. 2, No. 3&4, July & October 2017 pp. 219-238.

5. Ammar, A., Elouedi, Z, and Lingras, P. 2016. Meta-clustering of possibilistically segmented retail datasets, Fuzzy Sets and Systems, Vol 286, pp. 173-196. http://dx.doi.org/10.1016/j.fss.2015.07.019

6. Hilliard, T, Swan, L.G, Kavgic, M., Qin, Z., Lingras, P. 2016. Development of a whole building model predictive control strategy for a LEED silver community college Energy and Buildings, Energy and Buildings, Vol 111, pp. 224-232.

7. Lingras, P. and Haider, F. 2015. Partially ordered rough ensemble clustering for multigranular representations, Intelligent Data Analysis, Vol. 19, No. S1, pp. S103-S116. http://dx.doi.org/10.3233/IDA-150772

8. Lingras, P., Haider, F., and Triff, M. 2016. Granular meta-clustering based on hierarchical, network, and temporal connections, Granular Computing, Vol 1, Issue 1, pp. 1-22. http://dx.doi.org/10.1007/s41066-015-0007-9.

9. Ammar, A., Elouedi, Z, and Lingras, P. 2015. Segmented Clustering Based on Possibilistic and Rough Set Theories, International Journal of Intelligent Systems, Vol 30, pp. 676-706. http://dx.doi.org/10.1002/int.21723

10. Lingras P. and Triff, M. 2015. Fuzzy and Crisp Recursive Profiling of Online Reviewers and Businesses, the IEEE Transactions on Fuzzy Systems, Vol. 23, No. 4, pp. 1242-1258, http://dx.doi.org/10.1109/TFUZZ.2014.2349532

11. Lingras, P., Elagamy, A., Ammar, A., and Elouedi, Z. 2014. Iterative meta-clustering through granular hierarchy of supermarket customers and products, Information Sciences, Vol. 257, pp. 14-31, http://dx.doi.org/10.1016/j.ins.2013.09.018.

12. Lingras, P., Chen, M., and Miao, D. 2013. Qualitative and Quantitative Combinations of Crisp and Rough Clustering Schemes using Dominance Relations, International Journal of Approximate Reasoning, Vol. 55, pp. 238-258, http://dx.doi.org/10.1016/j.ijar.2013.05.007.

13. Lingras, P., Peters, G., Crespo, F., and Weber, R., February, 2013. Soft Clustering - Fuzzy and Rough Approaches and Their Extensions and Derivatives, International Journal of Approximate Reasoning, Vol. 54, No. 2, pp. 307-322, http://dx.doi.org/10.1016/j.ijar.2012.10.003.

14. Joshi, M., Lingras, P., Rao, C.R. 2012. Correlating Rough and Fuzzy Clustering, Fundamenta Informaticae, Vol. 115, Issue 2-3, pp. 233-246.

15. Lingras, P. and Butz, C.J., 30 September, 2011. Conservative and Aggressive Rough SVR Modeling, Theoretical Computer Science, Vol. 412, pp. 5885-5901.

16. Lingras, P. and Peters, G. 2011. Rough Clustering, Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery Vol. 1, No. 1, pp. 64-72, DOI: 10.1002/widm.16

17. Trabelsi, S., Elouedi, Z., and Lingras, P. 2011. Classification Systems based on Rough Sets under the Belief Function Framework, International Journal of Approximate Reasoning, Vol. 52, pp. 1409-1432, doi:10.1016/j.ijar.2011.08.002.

18. Butz, C.J., Chen, J., Konkel, K., Lingras, P. 2011. Join Tree Propagation Utilizing Both Arc Reversal and Variable Elimination, International Journal of Approximate Reasoning, Vol. 52, No. 7, pp. 948-959, doi:10.1016/j.ijar.2010.11.006.

19. Trabelsi, S., Elouedi, Z, and Lingras, P. 2011. Classification systems based on dynamic reduct under the belief function framework, Transactions on Rough Sets XIV, pp. 202-233, DOI: 10.1007/978-3-642-21563-6_11

20. Lingras, P., Joshi, M. 2011. Experimental Comparison of Iterative Versus Evolutionary Crisp and Rough Clustering, International Journal of Computational Intelligence Systems (IJCIS), Vol. 4, No. 1, pp. 12-28, http://dx.doi.org/10.2991/ijcis.2011.4.1.2

21. Zhang, P., Joshi, M. and Lingras, P. 2011. Use of Stability and Seasonality Analysis for Optimal Inventory Prediction Models, Journal of Intelligent Systems, Vol. 20, No. 2, pp. 147-166, DOI 10.1515 / JISYS.2011.009.

22. Lingras, P. and Butz, C.J. 2010. Rough Support Vector Regression, European Journal of Operational Research, Vol. 206, pp. 445-455.

23. Lingras, P., Chen, M., and Miao, D. 2009. Rough Cluster Quality Index Based on Decision Theory, IEEE Transactions on Knowledge and Data Engineering, Vol. 21, No. 7, pp. 1014-1026.

24. Lingras, P., Chen, M., and Miao, D. 2009. Semi-supervised Rough Cost/Benefit Decisions, Fundamenta Informaticae, Vol. 94, No. 2, pp. 233-244.

25. Butz, C.J., Chen, J., Konkel, K., Lingras, P. 2009. A Formal Comparison of Variable Elimination and Arc Reversal in Bayesian Network Inference, Intelligent Decision Technologies Journal, Vol. 177, pp. 3782-3798.

26. Lingras, P. and Butz, C.J. 2007. Rough Set based 1-v-1 and 1-v-r Approaches to Support Vector Machine Multi-classification, Information Sciences, Vol. 177, pp. 3782-3798.

27. Lingras, P. 2007. Applications of Rough Set Based K-Means,Kohonen, GA Clustering, Transactions on Rough Sets, VII, pp. 120-139.

28. Zhong, M., Sharma, S.C. and Lingras, P. 2007. Rationalizing Reliable Imputation Durations of Genetically Designed Time Delay Neural Network and Locally Weighted Regression Models, Transportation Planning and Technology, December 2007 Vol. 30, No. 6, pp. 609-626.

29. Zhong, M., Sharma, S.C. and Lingras, P. 2006. Genetically-Designed Time Delay Neural Networks for Multiple-interval Urban Freeway Traffic Flow Forecasting, Neural Information Processing - Letters and Reviews, Vol. 10, Nos. 8-9, pp. 201-209.

30. Zhong, M., Sharma, S.C. and Lingras, P. 2006. Matching Patterns for Updating Missing Values of Traffic Counts, Transportation Planning & Technology, Vol 29, No. 2, pp. 141-156.

31. Lingras, P., Hogo, M., Snorek, M., and West, C. 2005. Temporal Analysis of Clusters of Supermarket Customers: Conventional versus Interval Set Approach, Information Sciences, Vol. 172, pp. 215-240.

32. Lingras, P. and Huang, X. 2005. Statistical, Evolutionary, and Neurocomputing Clustering Techniques: cluster-based versus object-based approaches, AI Review, Vol. 23, Number 1, pp. 3-29.

33. Zhong, M., Sharma, S.C. and Lingras, P. 2005. Refining Genetically Designed Models for Improved Traffic Prediction on Rural Roads, Journal of Transportation Planning and Technology, Vol. 28, No. 3.

34. West, C., MacDonald, S., Lingras, P., and Adams, G. 2004. Relationship between Product Based Loyalty and Clustering based on Supermarket Visit and Spending Patterns, International Journal of Computer Science and Applications, Vol. 2, No. 2, pp. 85-100.

35. Zhong, M. Sharma S.C. and Lingras, P. 2005. Short-term Traffic Prediction on Different Types of Roads with Genetically Designed Regression and Time Delay Neural Network Models, Journal for Computing in Civil Engineering, American Society of Civil Engineers, Vol. 19, No. 1, pp. 94-103.

36. Zhong, M. Sharma S.C. and Lingras, P. 2005. Genetically Designed Models for Accurate Imputations of Missing Traffic Counts, Transportation Research Record 1879, The Journal of Transportation Research Board National Research Council, Washington DC, pp. 71-79.

37. Zhong M., Lingras P., and Sharma S.C. 2005. Effect of Missing Values Estimations on Traffic Parameters, Journal of Transportation Planning & Technology, Vol. 27, No. 2, pp. 119-144.

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Invited talks: 51

(Based on papers listed earlier. The objective is dissemination of research hence some of the topics tend to repeat)

1. Lingras P (2020). Advances in Rough and Soft Clustering: meta-clustering, dynamic clustering, data-stream clustering, Bharathiar University, Coimbatore-641 046, Tamil Nadu, India Department of Statistics Internationl Webinar on Data Science using Python

2. Lingras P (2020). Profiling Retail Customers using Unsupervised Learning: A Hands-on Experience, Faculty Development Workshop, Symbiosis International University, Pune, July 10-11, 2020.

3. Lingras P (2020). Rough Clustering and its Applications, Faculty Development Workshop, University of Mumbai, India, June 07, 2020.

4. Second Order Data Mining of Financial Transaction Time-Series for Fraud Detection and Improved Customer Relationship Management Lingras P (2017). Frontiers of Operations Research

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6. Lingras P (2018). Advances in Rough and Soft Clustering: meta-clustering, dynamic clustering, data-stream clustering, IV International Conference on Informatics and Computer Sciences - CICCI 2018, Informatica, 17th International Convention and Fair, Havana, Cuba, March 19-23, 2018.

7. Lingras P (2017). Rough and Soft Clustering, GLS (Gujrat Law Society) University, Ahmedabad, Gujrat, August 17, 2017.

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10. Lingras P (2015). Recursive and iterative clustering in granular hierarchical, network, and temporal datasets, 2015 IEEE International Conference on Research in Computational Intelligence and Communication Networks (ICRCICN 2015) to be held during November 20-22, 2015

11. Lingras P (2015). Clustering in Temporal Environment: Retail and Financial applications 4th International Conference on "Frontiers in Intelligent Computing, Theory and Application" (FICTA 2015), National Institute of Technology, Durgapur, India, November 16-18, 2015.

12. Lingras P (2014). Big Data Analytics, International Conference on Information and Communication Technology for Competitive Strategies (ICTCS - 2014), Udaipur, India, 14-16 November, 2014.

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Mining approaches: A research perspective, March 30, 2013. College of Engineering Pune, Pune, India.

19. Lingras P (2013). Recursive and iterative clustering in granular hierarchical, network, and temporal datasets, Refresher Course on the Recent Trends in ICT, January 5, 2013, University of Mumbai, Mumbai, Maharashtra.

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21. Lingras P (2012). Rough Cluster Quality Index Based on Decision Theory, International Conference on Perspectives of Computer Confluence with Sciences, December 10-12, Nowrosjee Wadia College, Pune.

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39. Lingras P (2011). Rough clustering and its applications, Indian Statistical Institute, Kolkata on March 2.

40. Lingras P (2011). Rough sets, Indian Statistical Institute, Kolkata on Feb 28.

41. Lingras P (2011). Dual rough support vector regression, National Conference on .Emerging Trends in Soft Computing. (NCETSC 11) in Pune from Feb 1-3.

42. Lingras P (2011). Rough support vector machines, Pune University Computing Science department on February 5.

43. Lingras P (2011). Rough sets, National Conference on .Emerging Trends in Soft Computing. (NCETSC 11) in Pune from Feb 1-3.

44. Lingras P (2011). Rough clustering and its applications, International Conference on Knowledge Engineering in Aurangabad from Jan 29-31.

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47. Lingras P (2010). Conservative and Aggressive Dual Rough SVR Modeling, Jodrey School of Computer Science, Acadia University, Wolfville, NS, Feb 12, 2010.

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50. Lingras P (2007). Conventional, Fuzzy, and Interval Set Based Temporal Cluster Migration Matrices, Jodrey School of Computer Science, Acadia University, Wolfville, NS, September 13, 2007.

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