
CONTACT INFORMATION	<p>Visual Surveillance Group Centre for Intelligent Machines ECE Department, McGill University 3480 University street Montreal, Quebec, Canada H3A 2A7</p> <p><i>Phone:</i> +1-(514) 398-8203 <i>E-mail:</i> javan @ cim.mcgill.ca http://www.cim.mcgill.ca/~javan</p>
SUMMARY	Seeking a challenging research/development in computer vision, machine learning, and image analysis.
RESEARCH INTERESTS	Computer Vision, Machine Learning, Pattern Recognition, Image Analysis
EDUCATION	<p>Ph.D., Candidate, Electrical Engineering, January 2010 - 2014</p> <p>McGill University, Montreal, Quebec, Canada</p> <p>Thesis: Human Behavior Understanding in Visual Surveillance Systems Supervisor: Prof. Martin D. Levine CGPA 4.00 out of 4.00</p> <p>M.Sc., Electrical Engineering, September 2006 - July 2009</p> <p>University of Tehran¹, Tehran, Iran</p> <p>Thesis: Feature Extraction from Stator Current for Mixed-Eccentricity Fault Diagnosis in Three Phase Squirrel Cage Induction Motors Supervisors: Prof. Babak N. Araabi and Prof. Jawad Faiz CGPA 17.96 out of 20.00</p> <p>B.Sc., Electrical Engineering, September 2002 - July 2006</p> <p>University of Tehran, Tehran, Iran</p> <p>Thesis: Automatic Classification of the Human Chromosomes in Microscopic Pictures Supervisor: Prof. S. K. Setarehdan CGPA 17.23 out of 20.00</p>
HONORS AND AWARDS	<p>McGill Graduate Research Enhancement and Travel Awards (GREAT), McGill University, Canada, 2013.</p> <p>IEEE Travel Grant Award, 2013.</p> <p>Clifford Pang Doctoral Fellowship, McGill University, Canada, 2012-2013.</p> <p>McGill Engineering Doctoral Award (MEDA), 2010-2013.</p> <p>McGill International Doctoral Award (MIDA), 2010-2013.</p> <p>McGill Provost's Graduate Fellowship (ProGF), 2010-2011.</p> <p>Accepted for studying in M.Sc. programs without entrance exam at University of Tehran, Iran, 2006.</p> <p>Ranked 151 among more than 10,000 participants in highly competitive university entrance exams for master degrees, Iran, 2006.</p> <p>Ranked 5th among the 67 undergraduate control's students at University of Tehran, Iran, 2006.</p> <p>Chosen as the "Exceptional Talented" student at University of Tehran, Iran 2002-2009.</p> <p>Ranked 153rd among more than 400,000 applicants at nationwide university entrance</p>

¹University of Tehran is the oldest, largest, and highly prestigious university of Iran

exam for B.Sc. degree, Iran, 2002.

Accepted in the first stage of nationwide competition for the national “Physics” Olympiad team, Iran, 2000.

- RESEARCH AREA/PROJECTS
- Multi target tracking.
 - Dominant behaviour understanding in unconstrained videos.
 - Recognizing human action in videos using a hierarchical framework.
 - Using spatio-temporal video volumes for real-time detection and localization of short-term anomalous actions in surveillance videos.
 - Facial micro-expression recognition in unconstrained videos.
 - Geodesic active contours for deformable object tracking.
 - Mixed eccentricity fault diagnosis for induction and permanent magnet motors based on stator current monitoring.
 - Automatic classification of highly curved and truncated human chromosomes in microscopic pictures.
 - Developing biological inspired and emotional controllers (BELBIC) for controlling stable and unstable systems.
 - Online fuzzy concept formation and learning in intelligent agents by reinforcement learning.
 - Modeling, system identification and controller design for a biological process (Penicillin production bio-reactors).
- REFEREED JOURNAL PUBLICATIONS
- M. Javan Roshtkhari and M. D. Levine, “Human Activity Recognition in Videos Using a Single Example”, *Image and Vision Computing*, Vol. 31, pp. 864-876, 2013.
 - M. Javan Roshtkhari and M. D. Levine, “An On-Line, Real-Time Learning Method For Detecting Anomalies In Videos Using Spatio-Temporal Compositions”, *Computer Vision and Image Understanding*, Vol. 117, pp. 1436-1452, 2013.
 - B. M. Ebrahimi, M. Javan Roshtkhari, J. Faiz, S. Khatami, “Advanced Eccentricity Fault Recognition in Permanent Magnet Synchronous Motors using Stator Current Signature Analysis”, *IEEE Transactions on Industrial Electronics*, Vol 61, pp. 2041-2052, 2013.
 - M. Javan Roshtkhari, A. Arami, C. Lucas, “Imitative Learning Based Emotional Controller for Unknown Systems with Unstable Equilibriums”, *International Journal of Intelligent Computing and Cybernetics*, Vol. 2, pp. 334-359, 2010.
 - B. M. Ebrahimi, J. Faiz, M. Javan Roshtkhari, “Static, Dynamic and Mixed Eccentricity Fault Diagnosis in Permanent Magnet Synchronous Motors”, *IEEE Transactions on Industrial Electronics*, Vol. 56, pp. 4727-39, 2009.
 - M. Javan Roshtkhari and S. K. Setarehdan, “A Novel Algorithm for Straightening Highly Curved Images of Human Chromosome”, *Pattern Recognition Letters*, Vol. 29, pp. 1208-17, 2008.
 - B. M. Ebrahimi, J. Faiz, M. Javan Roshtkhari and A. Zargham Nejjhad, “Static Eccentricity Fault Diagnosis in Permanent Magnet Synchronous Motor using Time Stepping Finite Element Method”, *IEEE Transactions on Magnetics*, Vol. 44, Issue: 11, Part 2, pp. 4297-300, 2008.
- REFEREED CONFERENCE PAPERS
- M. Javan Roshtkhari, M. D. Levine, “Multiple Object Tracking Using Local Motion Patterns”, *British Machine Vision Conference (BMVC)*, 2014”.
 - M. Javan Roshtkhari, M. D. Levine, “Online Dominant and Anomalous Behavior Detection in Videos”, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)* 2013.

- M. Javan Roshtkhari, M. D. Levine, "A Multi-Scale Hierarchical Codebook Method for Human Action Recognition in Videos Using a Single Example" The 9th Conference on Computer and Robot Vision (CRV 2012), May 2012, Toronto, Ontario, Canada.
- B. M. Ebrahimi, J. Faiz, M. Javan Roshtkhari, B. N. Araabi, "Global indices analysis for eccentricity fault diagnosis in induction motorse" The 14th International IGTE Symposium on Numerical Field Calculation in Electrical Engineering, September 2010, Graz, Austria.
- M. Javan Roshtkhari, A. Arami, C. Lucas, "Emotional Control of Inverted Pendulum System, A soft switching from Imitative to emotional learning" The 4th International Conference on Autonomous Robots and Agents (ICARA 09), February 2009, Wellington, New Zealand.
- M. Javan Roshtkhari and S. K. Setarehdan, "Linear Discriminant Analysis of the Wavelet Domain Features for Automatic Classification of Human Chromosomes", Presented at the 9th International Conference on Signal Processing (ICSP 08), October 2008, Beijing, China.
- A. Arami, M. Javan Roshtkhari and C. Lucas, "A Fast Model Free Intelligent Controller Based on Fused Emotions: A Practical Case Implementation", Presented at the 16th Mediterranean Conference on Control and Automation (MED08), June 2008, Corsica, France.
- M. Javan Roshtkhari, A. Ashoori and S. Javan Roshtkhari "Control Relevant Identification for Controlling a Continuous-Stream Bioreactor with Unknown Dynamics", Presented at the 3rd International Symposium on Communication, Control and Signal Processing (ISCCSP 2008), March 2008, Malta.
- M. Javan Roshtkhari and S. Javan Roshtkhari, "Robust Controller Design for a Continuous Bio-Reactor", Presented at the 5th International Chemical Engineering Congress (IChEC 2008), January 2008, Kish Island, Iran.
- M. Javan Roshtkhari and S. K. Setarehdan, "A New Approach to Automatic Classification of the Curved Chromosomes", Presented at the 5th International Symposium on Image and Signal Processing and Analysis (ISPA 07), September 2007, Istanbul, Turkey.
- M. Javan Roshtkhari and S. K. Setarehdan, "A Novel Algorithm for Automatic Straightening the curved chromosomes in microscopic pictures", Presented at the 15th Iranian Conference on Electrical Engineering (ICEE 07), May 2007, Tehran, Iran.

TEACHING
EXPERIENCE

McGill University, Montreal, QC, Canada

Teaching Assistant

September, 2010 - present

Duties have included: head TA, giving class lectures, leading weekly tutorials, preparing weekly exams, leading student groups toward the final robotic project, creating assignments and assisting graduate and undergraduate students through their projects and homeworks.

ECSE 211 (Design Principles and Methods), Fall 2013, Winter 2013.

ECSE 210 (Electrical Circuits II), Fall 2013, Summer 2013, Winter 2013, Fall 2012, Summer 2012, Winter 2012, Fall 2011, Summer 2011, Fall 2010.

ECSE 200 (Electrical Circuits I), Fall 2011, Winter 2011.

ECSE 529 (Computer and Biological Vision), Fall 2010, Fall 2012.

University of Tehran, Tehran, Iran

Teaching Assistant

Fall, 2005 - Fall 2006

Electronics II, Fall 2005, Fall 2006.

PROFESSIONAL EXPERIENCE **McGill University**, Montreal, QC, Canada
Research Assistant **January, 2010 - present**
Algorithm development for visual surveillance system, activity recognition and abnormal behavior detection.

Farasazan Company, Semnan, Iran
Automation and Instrumentation Engineer **August, 2006 - November, 2009**
Programming PLCs, designing a monitoring system for hydraulic and pneumatic equipments, fault diagnosis and prognosis in the control systems.

Reviewer of scientific journals: Electric Power Components & Systems, Computer Vision and Image Understanding.

COMPUTER SKILLS Programming Languages: C/C++, Java, Assembly, -80x86 microprocessors.
Engineering Softwares: Visual Studio, Matlab and Simulink, Mathematica, Maple, LaTeX, HSPICE, SIMATIC Manager, and presentation softwares.
Operating Systems: Windows, Unix/Linux.
Computer Graphic: Adobe Photoshop, Adobe Lightroom, Macromedia Freehand, and Blender 3D.

LANGUAGE SKILLS *English, French* (intermediate), and *Persian*.

COMMUNICATION AND LEADERSHIP SKILLS Facilitating small group discussions as a Teaching Assistant.
Giving lectures for graduate courses as a Teaching assistant.
Supervising small groups of undergraduate students for Lego NXT robotics design competition.
Teaching photography in workshops (2005-2008 in Iran, 2011 in McGill University, Canada).
President of McGill Iranian Student Association (MISA), 2010-2011.
Secretary of McGill IEEE student branch, 2012-2013.

ACTIVITIES Professional Photography (2005-present): Photojournalist (worked for news agencies in Iran), Participating in several photo-exhibitions, Teaching photography in workshops (2005-2008 in Iran, 2011 in Canada).

REFERENCES References are available on request.