NSERC CRSNG

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Dr. Parvaneh Saeedi

Correspondence language: English

Contact Information

The primary information is denoted by (*)

Address

Primary Affiliation (*)

School of Engineering Science
Simon Fraser University
8888 UNiversity Drive
Burnaby British Columbia V5A 1S6
Canada

Telephone

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Dr. Parvaneh Saeedi

Language Skills

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

Degrees

- 2004/3 — Doctorate, Electrical and Computer Engineering, University of British Columbia
  Supervisors: Dr. Peter Lawrence, 1998/11 - 2004/3
- 1998/11 — Master's Thesis, Electrical and Computer Engineering, University of British Columbia
  Supervisors: Dr. Peter Lawrence, 1996/9 - 1998/10

User Profile

Research Specialization Keywords: Biomedical image processing, Image processing, Signal processing, Computer vision, Machine learning

Employment

2012/9
Associate Professor
School of Engineering science, Burnaby, BC, Simon Fraser University
Full-time, Associate Professor
Tenure Status: Tenure
Full-time position with responsibilitie including 40% teaching, 40% research and 20% adminstration.

2007/1 - 2012/9
Assistant Professor
Engineering Science, Burnaby, BC, Simon Fraser University
Full-time, Assistant Professor
Tenure Status: Tenure
Full-time position with responsibilitie including 40% teaching, 40% research and 20% adminstration.

2000/5 - 2007/11
System Analyst
Genome sciences center, BC Cancer Agency
Design and implementation of softwaresystems forprocessing DNA sequences and images.

2004/9 - 2006/12
System Analyst
Research and Development, MacDonald, Dettwiler and Associates Ltd
Design and implementation of satellite related software systems including: controllers, simulators, and processing units.

Leaves of Absence and Impact on Research

2015/9 - 2016/5
Parental, Simon Fraser University
I was away from SFU during an 8-month parental leave from Sept. 2015 until April 2016.

2013/5 - 2013/12
Parental, Simon Fraser University
I was away from SFU during an 8-month parental leave from May 2013 until January 2014.

Research Funding History

Awarded [n=2]

2016/6 - 2020/6
Principal Investigator
Technology Demonstration Program (TDP), Grant

Funding Sources:
Government of Canada
Technology Demonstration Program (TDP)
Total Funding - 375,000
Portion of Funding Received - 375,000
Funding Competitive?: Yes

2013/2 - 2018/2
Principal Applicant
Computer Vision for Female Infertility Treatment, Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
Discovery
Total Funding - 100,000
Portion of Funding Received - 100,000
Funding Competitive?: Yes

Completed [n=4]

2015/2 - 2015/9
Principal Investigator
Cloud-Based License Plate Recognition Interface for IP Cameras, Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
Engage
Total Funding - 24,724
Portion of Funding Received - 24,724
Funding Competitive?: Yes

2013/8 - 2014/2
Principal Applicant
Automatic Conveyor Belt Tear Detection using Computer Vision, Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
Engage
Total Funding - 24,994
Portion of Funding Received - 24,994
Funding Competitive?: Yes

2012/6 - 2013/2
Principal Investigator
Automatic Detection and Assessment of Blastomeres in Day 1 to Day 3 of Human Embryos, Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
Engage
Total Funding - 24,947
Portion of Funding Received - 24,947
Funding Competitive?: Yes

2007/6 - 2012/6
Principal Applicant

University Faculty Award, Fellowship

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
University Faculty Award
Total Funding - 250,000
Portion of Funding Received - 0
Funding Competitive?: Yes

Student/Postdoctoral Supervision

Bachelor's Honours [n=6]

2018/5 - 2019/6
Principal Supervisor

Chloe Hill (In Progress) , Simon Fraser University
Student Degree Expected Date: 2019/6
Thesis/Project Title: Implantation prediction for day-5 images of human embryos using machine learning
Present Position: Undergraduate student, Simon Fraser University

2017/9 - 2018/12
Principal Supervisor

Amir Hadjifaradji (In Progress) , Simon Fraser University
Student Degree Expected Date: 2018/12
Thesis/Project Title: Live birth prediction of human blastocysts using deep learning models
Present Position: Student, Suimon Fraser University

2017/5 - 2018/12
Principal Supervisor

Thomas Kramer (In Progress) , Simon Fraser University
Student Degree Expected Date: 2018/12
Thesis/Project Title: Snow identification and separation from cloud regions in satellite imageries
Present Position: Research Associate, Simon Fraser University, Burnaby, BC

2017/1 - 2017/6
Principal Supervisor

Timothy Horita (Completed) , Simon Fraser University
Thesis/Project Title: Automatic Cloud Detection and Verification in SatelliteImages
Present Position: Research and Development Engineer, eTreatMD

2016/5 - 2018/5
Academic Advisor

Ted Lee (In Progress) , Simon Fraser University
Student Degree Expected Date: 2018/5
Thesis/Project Title: Super-resolution image reconstruction via airborne imagery
Present Position: Co-op student, Intel

2012/1 - 2013/4
Principal Supervisor

Dianna Yee (Completed) , Simon Fraser University
Thesis/Project Title: Automatic Image Segmentation of Day Five Human Blastocysts
Present Position: PhD student, Mercedes Benz Company, Germany

Master's Thesis [n=8]

2018/9 - 2020/9
Principal Supervisor

Liz Lockhart (In Progress) , Simon Fraser University
Student Degree Expected Date: 2020/9
Thesis/Project Title: Human blastcyst grade prediction using machine learning techniques
Present Position: Graduate student, Simon Fraser University

2017/2 - 2020/12
Principal Supervisor

Fatemeh Mirshahi (In Progress) , Simon Fraser University
Student Degree Expected Date: 2020/1
Thesis/Project Title: On board super-resolution image reconstruction from multi-view satellite imageries
Present Position: PhD student, Simon Fraser University, Burnaby, BC

2015/1 - 2017/4 Principal Supervisor	Shakiba Kheradmand (Completed) , Simon Fraser University Thesis/Project Title: Human Embryo Component Detection using Computer Vision Present Position: Software Engineer, Vancouver Vision
2013/5 - 2015/7 Principal Supervisor	Laurent Ye (Withdrawn) , Simon Fraser University Thesis/Project Title: Identification of blastomeres in microscopic human embryo images Present Position: Programmer, Intel
2013/1 - 2014/8 Principal Supervisor	Amarjot Singh (Completed) , Simon Fraser University Thesis/Project Title: Automatic Methods for Human Embryo Component Extraction Present Position: PhD student, University of Cambridge, U.K.
2011/1 - 2014/12 Principal Supervisor	Li Songlin (Completed) , Simon Fraser University Thesis/Project Title: Object Recognition using Combined Color and Angular SpatialMatching Present Position: Compliance Technical Analyst, SAP Canada Inc.
2010/9 - 2013/4 Principal Supervisor	Mao Mao (Completed) , Simon Fraser University Thesis/Project Title: A novel feature for registration of oblique aerial images under large viewpoint variations Present Position: Software Programmer, Microsoft
2010/8 - 2012/8 Principal Supervisor	Blair Zacharay (Completed) , Simon Fraser University Thesis/Project Title: Towards Automatic 3D Reconstruction of Pitched Roofs inMonocular Satellite/Aerial Images Present Position: System engineer

Doctorate [n=5]

2017/2 - 2020/12 Principal Supervisor	Sorour Mohajerani (In Progress) , Simon Fraser University Student Degree Expected Date: 2020/12 Thesis/Project Title: Onboard Satellite Image Processing Present Position: PhD student, Simon Fraser University, Burnaby, BC
2015/6 - 2019/5 Principal Supervisor	Reza Moradi Rad (In Progress) , Simon Fraser University Student Degree Expected Date: 2019/5 Thesis/Project Title: Automatic Identification of Human Embryo components via Morphological Characteristics Present Position: PhD student, Simon Fraser University, Burnaby, BC
2009/9 - 2013/4 Co-Supervisor	Hadi Hadizadeh (Completed) , Simon Fraser University Thesis/Project Title: Visual Saliency in VideoCompression and Transmission Present Position: University professor, Birjand University, Iran
2008/5 - 2012/7 Co-Supervisor	Yue Meng Chen (Completed) , Simon Fraser University Thesis/Project Title: Motion modeling and segmentation in compressed video with applications Present Position: CEO, HiCling Technology
2008/5 - 2012/12 Principal Supervisor	Izadi Mohammad (Completed) , Simon Fraser University Thesis/Project Title: 3D Building Modeling and Reconstruction using PhotometricSatellite and Aerial Imageries Present Position: Software Engineer, Google

Research Associate [n=4]

2015/6 - 2020/12 Principal Supervisor	Zachary Blair, Simon Fraser University Thesis/Project Title: Deep learning for cloud and haze detection in satellite imageries Present Position: Research Associate, Simon Fraser University, Burnaby, BC

2013/8 - 2014/4 Principal Supervisor	Neerav Patel (Completed) , University of British Columbia Thesis/Project Title: Automatic Conveyor Belt Tear Detection using Computer Vision Present Position: Firmware Engineer, Pointgrey Research
2013/5 - 2013/9 Principal Supervisor	John Buonassisi (Completed) , Simon Fraser University Thesis/Project Title: Image Segmentation using Graphical ProbabilisticMethods Present Position: Software Engineer, MacDonald, Dettwiler and Associates Ltd.
2012/5 - 2012/8 Principal Supervisor	Sajib Saha (Completed) , Simon Fraser University Thesis/Project Title: Creation of the 3D Ground Truth for buildings around Vancouver airport. Present Position: Software Development Engineer, Electronics Arts

Event Administration

2015/9 - 2016/5	Technical Program Co-Chair, IEEE Canadian Conference on Electrical and Computer Engineering (CCECE), Conference, 2016/5 - 2016/5
2013/1 - 2014/9	Organizing Committee memeber, IEEE SPS / UBC ICICS Summer School on "Signal Processing and Machine Learning for Big Data", Workshop, 2014/7 - 2014/8

Organizational Review Activities

2011/1 - 2017/7	Reviewer, Natural Sciences and Engineering Research Council of Canada (NSERC) Reviewing proposals for various funding programs, including Strategic, CRD, Engange grants.
2007/1 - 2017/7	Reviewer, The Institute of Electrical and Electronics Engineers Active reviewer for various Journals including IEEE Trans on Geoscience, Image processing, and biomedical Engineering as well many IEEE conferences.
2010/4 - 2014/4	Reviewer, Mathematics of Info Tech & Complex Systems Reviewing proposals for MITACS Accelerate program
2011/4 - 2013/12	Reviewer, Qatar National Research Fund (QNRF) Reviewing research grant proposals

International Collaboration Activities

2016/5 - 2017/7	Collaborator, Korea, Republic of Collaboration with Prof. Kyoung Bae Eum of Kunsan National University, Gunsan-si , Korea, in the area of image processing and reconstruction. A publication is currently being prepared that is resulted from this collaboration.

Committee Memberships

2016/6 - 2018/5	Committee Member, Tenure and Promotion Committee (School of Engineering Science), Simon Fraser University Working on matters of renewal, tenure and promotion of faculty members.
2008/9 - 2017/8	Committee Member, Biomedical Option Committee (School of Engineering Science), Simon Fraser University

2008/9 - 2017/8	Chair, Equity & Diversity Committee (School of Engineering Science), Simon Fraser University
2007/1 - 2017/8	Committee Member, Systems Engineering Option Committee (School of Engineering Science), Simon Fraser University
2009/9 - 2013/8	Committee Member, Graduate Program Committee (School of Engineering Science), Simon Fraser University Working on matters related to graduate students
2012/6 - 2013/5	Committee Member, Tenure and Promotion Committee (School of Engineering Science), Simon Fraser University Working on matters of renewal, tenure and promotion of faculty members.

Other Memberships

2016/12 - 2018/12	Member, ACM
2000/8 - 2018/8	Member, IEEE
2012/6 - 2018/6	Secretary/Treasurer, IEEE Circuits and Systems Society joint Chapter of the Vancouver/ Victoria Sections

Presentations

1. (2014). Automatic blastomere detection in day 1 to day 2 human embryo images using partitioned graphs and ellipsoids. IEEE International Conference on Image Processing, Paris, France
   Main Audience: Researcher
   Invited?: No, Keynote?: No

Text Interviews

2016/12/06	IVF success rate poised to improve with new research from SFU engineering scientist, Simon Fraser University

Publications

Journal Articles

1. Sorour Mohajerani*, Parvaneh Saeedi. (2018). Shadow Detection in Single RGB Images Using a Context Preserver Convolutional Neural Network Trained by Multiple Adversarial Examples. IEEE, Transaction on Image Processing. : 1-10.
   Submitted
   Refereed?: Yes, Open Access?: No
2. Reza Moradi Rad*, Parvaneh Saeedi, Jason Au, and Jon Havelock. (2018). Human Blastocyst's Zona Pellucida Segmentation via Boosting Ensemble of Complementary Learning. Informatics in Medicine Unlocked, Elsevier. : 1-10.
   Published
   Refereed?: Yes, Open Access?: Yes

3. Reza Moradi Rad*, Parvaneh Saeedi. (2018). A Hybrid Approach for Multiple Blastomeres Identification in Early Human Embryo Images. Elsevier, Computers in Biology and Medicine. : 1-10.
   In Press
   Refereed?: Yes, Open Access?: Yes

4. Parvaneh Saeedi, Dianna Yee*, Jason Au, Jon Havelock. (2017). Automatic Identification of Human Blastocyst Components via Texture. IEEE TRANSACTION ON BIOMEDICAL ENGINEERING.
   Published
   Refereed?: Yes, Open Access?: No

5. Shakiba Kheradmand*, Parvaneh Saeedi, Jason Au, Jon Havelock. (2017). Automatic Preimplantation Blastomere Detection in HMC Microscopic Images of Early Stage Human Embryos. IEEE TRANSACTIONS ON MEDICAL IMAGING. : 1-10.
   Submitted
   Refereed?: Yes, Open Access?: No

6. Thomas Krammer*, Parvaneh Saeedi. (2017). Improving Landsat 8 Cloud Detection Algorithmsvia a new Snow Identification and Separation Algorithm. IEEE Geo-science & Remote Sensing Letters.
   Submitted
   Refereed?: Yes

7. Amarjot Singh*, Jason Au, Parvaneh Saeedi, Jon Havelock. (2015). Automatic Segmentation of Trophectoderm in Microscopic Images of Human Blastocysts. IEEE Transactions on Biomedical Engineering. 62(1): 382-392.
   Published
   Refereed?: Yes, Open Access?: No

8. Parvaneh Saeedi, Mao Mao*. (2014). Two-Edge-Corner Image Features for Registrationof Geospatial Images with Large View Variations. International Journal of Geosciences. 5: 1324-1344.
   Published
   Refereed?: Yes, Open Access?: Yes

9. Melissa Cote*, Parvaneh Saeedi. (2014). Hierarchical image segmentation using a combinedgeometrical and feature based approach. Journal of Data Analysis and Information Processing. 2(4): 117-136.
   Published
   Refereed?: Yes, Open Access?: Yes

10. Melissa Cote*, Parvaneh Saeedi. (2013). Automatic Rooftop Extraction in Nadir Aerial Imagery of Suburban Regions using Corners and Variational Level Set Evolution. IEEE Transactions on Geo-science and Remote Sensing. 51(1): 313-328.
    Published
    Refereed?: Yes, Open Access?: No

11. Mohammad Izadi*, Parvaneh Saeedi. (2012). 3D Polygonal Building Detection in Monocular Satellite Images. IEEE Transactions on Geo-science and Remote Sensing. 50(6): 2254-2272.
    Published
    Refereed?: Yes, Open Access?: No

12. Mohammad Izadi*, Parvaneh Saeedi. (2012). Robust Weighted Graph Transformation Matching for Rigid and Non-rigid Image Registration. IEEE Trans. on Image Processing. 21(10): 4369-4382.
    Published
    Refereed?: Yes, Open Access?: No

Conference Publications

1. Reza Moradi Rad*, Parvaneh Saeedi, Jason Au and Jon Havelock. (2018). Multi-Resolutional Ensemble of Stacked Dilated U-Net for Inner Cell Mass Segmentation in Human Embryonic Images. IEEE International Conference on Image Processing. IEEE International Conference on Image Processing, Athens, Greece (1-6)
   Conference Date: 2018/10
   Paper
   Published
   Refereed?: Yes, Invited?: No

2. Sorour Mohajerani*, Parvaneh Saeedi. (2018). CPNet: A Context Preserver Convolutional Neural Network for Detecting Shadows in Single RGB Images. IEEE 20th International Workshop on Multimedia Signal Processing. IEEE 20th International Workshop on Multimedia Signal Processing, (1-5)
   Conference Date: 2018/8
   Paper
   Published
   Refereed?: Yes, Invited?: No

3. Fatemeh Mirshahi*, Parvaneh Saeedi. (2018). A Dual Path Deep Network for Single Image Super-Resolution Reconstruction. IEEE 20th International Workshop on Multimedia Signal Processing. IEEE Multimedia Signal Processing, Vancouver, (1-5)
   Conference Date: 2018/8
   Paper
   Published
   Refereed?: Yes, Invited?: No

4. Reza Moradi Rad*, Parvaneh Saeedi*, Jason Au, Jon Havelock. (2018). Blastomere Cell Counting and Centroid Localization in Microscopic Images of Human Embryo. IEEE 20th International Workshop on Multimedia Signal Processing. IEEE 20th International Workshop on Multimedia Signal Processing, Vancouver, Canada (1-5)
   Conference Date: 2018/8
   Paper
   Published
   Refereed?: Yes, Invited?: No

5. Sorour Mohajerani*, Thomas Karamer*, Parvaneh Saeedi. (2018). A Cloud Detection Algorithm for Remote Sensing Images Using Fully Convolutional Neural Networks. IEEE 20th International Workshop on Multimedia Signal Processing. IEEE 20th International Workshop on Multimedia Signal Processing, Vancouver, Canada (1-5)
   Conference Date: 2018/8
   Paper
   Published
   Refereed?: Yes, Invited?: No

6. Thomas A. Krammer*and Parvaneh Saeedi. (2018). **Improving Landsat 8Cloud Detection Algorithms via a new Snow Identification and SeparationAlgorithm**. CSCE'18. 2018 International Congress in Computer Science, Computer Engineering & Applied Computing, Las Vegas, United States (1-6)
   Conference Date: 2018/7
   Paper
   Published
   Refereed?: Yes, Invited?: No

7. Reza Moradi Rad*, Parvaneh Saeedi, Jason Au, Jon Havelock. (2017). Coarse-to-Fine Texture Analysis for Inner Cell Mass Identification in Human Blastocyst Microscopic Images. IEEE. International Conference on Image Processing Theory, Tools and Applications, Montreal, Canada (1-5)
   Conference Date: 2017/11
   Paper
   Published
   Refereed?: Yes, Invited?: No

8. S. Kheradmand*, A. Singh*, P. Saeedi, J. Au, J. Havelock. (2017). Inner Cell Mass Segmentation in Human HMC Embryo ImagesUsing Fully Convolutional Network. IEEE. IEEE International Conference on Image Processing, China (1-5)
   Conference Date: 2017/9
   Paper
   In Press
   Refereed?: Yes, Invited?: No

9. Timothy Horita*, Parvaneh Saeedi, Bernhard Rabus. (2017). Automatic Cloud Detection and Verification in SatelliteImages. WORLDCOMP. International Conference on Image Processing, Computer Vision, and Pattern Recognition, Las Vegas, United States (1-4)
   Conference Date: 2017/7
   Paper
   Published
   Refereed?: Yes, Invited?: No

10. Reza Moradi Rad*, Parvaneh Saeedi, Ivan Bajic. (2016). Automatic Cleavage Detection in H.264 Sequence of Human Embryo Development. IEEE. IEEE Canadian Conference on Electrical and Computer Engineering, Vancouver, Canada (1-4)
    Conference Date: 2016/5
    Paper
    Published
    Refereed?: Yes, Invited?: No

11. Shakiba Kheradmand* , Parvaneh Saeedi, Ivan Bajic. (2016). Human Blastocyst Segmentation using Neural Network. IEEE. IEEE Canadian Conference on Electrical and Computer Engineering, Vancouver, Canada (1-4)
    Conference Date: 2016/5
    Paper
    Published
    Refereed?: Yes, Invited?: No

12. Amarjot Singh*, John Buonassisi*, Parvaneh Saeedi, Jon Havelock. (2014). Automatic blastomere detection in day 1 to day 2 human embryo images using partitioned graphs and ellipsoids. IEEE. IEEE International Conference on Image Processing, Paris, France (917-921)
    Conference Date: 2014/10
    Paper
    Published
    Refereed?: Yes, Invited?: No

13. D. Yee*, P. Saeedi, J. Havelock. (2013). An Automatic Model-Based Approach for Measuring the Zona Pellucida Thickness in Day Five Human Blastocysts. WORLDCOMP. International Conference on Image Processing, Computer Vision, and Pattern Recognition, Las Vegas, United States (1-6)
    Conference Date: 2013/7
    Paper
    Published
    Refereed?: Yes, Invited?: No

14. Parvaneh Saeedi, Mao Mao*. (2013). Image Registration Under Larger View Variation using 2EC Features. WORLDCOMP. Image Registration Under Larger View Variation using 2EC Features, Las Vegas, United States (1-4)
Conference Date: 2013/7
Paper
Published
Refereed?: Yes, Invited?: No

15. Z. Blair*, P. Saeedi. (2012). 3D Reconstruction of Pitched Roofs in Monocular Satellite/Aerial Images. WORLDCOMP. International Conference on Image Processing, Computer Vision, and Pattern Recognition, Las Vegas, United States (1-6)
Conference Date: 2012/7
Paper
Published
Refereed?: Yes, Invited?: No

16. P. Saeedi, M. Cote*. (2012). A Star-Corner Algorithm for Building Extraction in Satellite/Aerial Images. WORLDCOMP. International Conference on Image Processing, Computer Vision, and Pattern Recognition, Las Vegas, United States (1-6)
Conference Date: 2012/7
Paper
Published
Refereed?: Yes, Invited?: No

Intellectual Property

Patents

1. Systems and methods for iso-perceptible power reduction for displays. United States. 61613879. 2013/09/26.
Patent Status: Pending
Inventors: H. Hadizadeh*, I. V. Bajic, P. Saeedi, S. Daly