Olga Veksler

Computer Science Department
University of Western Ontario
Middlesex College 361, London, ON, Canada, N6A 5B7
519-661-2111 x81417, olga@csd.uwo.ca

1 Education

Degree	University	Department	Year
B.A. magna cum laude	New York University	Mathematics and Computer Science	1995
M.Sc.	Cornell University	Computer Science	1999
Ph.D.	Cornell University	Computer Science	1999

2 Employment History

Date	Position	Department	Institution
2018-present	Full Professor	School of Computer Science	University of Waterloo
2015-2018	Full Professor	Computer Science	University of Western Ontario
2009-2015	Associate Professor	Computer Science	University of Western Ontario
2003-2009	Assistant Professor	Computer Science	University of Western Ontario
1999-2003	Scientist	Computer Science	NEC Research Institute

3 Honors and Awards

- NSERC Discovery Accelerator Supplement (DAS) award, 2012-2015
- "Helmholtz Test-of-Time Award" at the top computer vision conference, the International Conference on Computer Vision (ICCV 2011), in recognition of seminal work called "Fast Approximate Energy Minimization via Graph Cuts"
- 10-top picks by TPAMI (one out of 10 most-significant publications over 30 year history)
- Early Researcher Award (ERA), Ministry of Research and Innovation, 2009
- NSF/GEE Fellowship, 1996-1998
- Diploma with honors in Mathematics and with honors in Computer Science from New York University
- 1995 Math Prize, New York University
- 1994 Math Prize, New York University

4 Publications

4.1 Summary

Book Chapters	4
Articles in Peer-Reviewed Journals	14
Articles in Peer-Reviewed Conference Proceedings	46
Refereed Abstracts	1

4.2 Impact Indicators

Total number of citations, according to Google scholar	14100
h-index	33

4.3 Books

1. Y. Boykov, A. Delong, O. Veksler, V.Kolmogorov, "Optimization in Computer Vision, Morgan and Claypool Publishers", 2012, in preparation.

4.4 Book Chapters

1. H. Ishikawa, O. Veksler, "Convex and Truncated Convex Priors for Multi-label MRFs", in *Advances in Markov Random Fields for Vision and Image Processing* by editors A. Blake, P. Kohli and C. Rother, MIT Press, 2011.

2. Y. Boykov, O. Veksler, and R. Zabih "Optimizing Multi-Label MRFs by Move Making Algorithms", in *Advances in Markov Random Fields for Vision and Image Processing* by editors A. Blake, P. Kohli, C. Rother, MIT Press, 2011.

3. R. Szeliski, R. Zabih, D. Scharstein, O. Veksler, V. Kolmogorov, A. Agarwala, M. Tappen, C. Rother, "A Comparative Study of Energy Minimization Methods for MRFs", in *Advances in Markov Random Fields for Vision and Image Processing* by editors A. Blake, P. Kohli, C. Rother, MIT Press, 2011.

4. Y. Boykov and O. Veksler, "Graph Cuts in Vision and Graphics: Theory and Applications", in *Mathematical Models of Computer Vision: The Handbook* by editors N.Paragios, Y.Chen, O.Faugeras, pp. 79-96, Springer-Verlag, 2005.

4.5 Refereed Journals

1. L. Gorelick, Y. Boykov, O. Veksler, I. B. Ayed, A. Delong, "Local Submodularization for Binary Pairwise Energies", IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), vol. 39(2): 258-271, 2017.

2. L. Gorelick, O. Veksler, Y. Boykov, C. Nieuwenhuis, "Convexity Shape Prior for Segmentation, in IEEE Trans. on Pat.Analysis and Machine Intelligence (TPAMI), vol. 39(2), pp. 258-271, 2017.

3. L. Gorelick, O. Veksler, M. Gaed, J. Gomes, M. Moussa, G. Bauman, A. Fenster, A. Ward, "Prostate Histopathology: Learning Tissue Component Histograms for Cancer Detection and Classification", *IEEE Transactions on Medical Imaging* (TMI), 2(10) 1804-1818, 2013.

4. A. Delong, L. Gorelick, O. Veksler, Y. Boykov, "Minimizing Energies with Hierarchical Costs", *International Journal of Computer Vision* (IJCV), vol. 100(1), pp. 38-58, 2012.

5. O. Veksler, "Multi-label Moves for MRFs with Truncated Convex Priors", *International Journal of Computer Vision* (IJCV), vol. 98(1), pp. 1-14, 2012.

6. M. P. Kumar, O. Veksler, P. Torr, "Improved Moves for Truncated Convex Models", *Journal of Machine Learning Research* (JMLR), vol. 12, pp. 31-67, 2011.

7. Y. Liu, O. Veksler, O. Juan, "Simulating Classic Mosaics with Graph Cuts", *Computer Graphics Forum* (GF), vol. 29, no. 8, pp. 2387-2399, 2010. This paper has been selected by a selection committee to be presented as a full technical paper at EuroGraphics 2011. Only 19 papers out of all published in this journal in 2011 have been selected.

8. X. Liu, O. Veksler, J. Samarabandu, "Graph Cut Optimization with Ordering Constraints on Labels", in *IEEE Transactions on Pattern Analysis and Machine Intelligence* (TPAMI), vol. 32(7), pp. 1182-1196, 2010.

9. P. Das, O. Veksler, V. Zavadsky, Y. Boykov, "Semiautomatic Segmentation with Compact Shape Prior", invited to special issue of *Image and Vision Computing Journal*, vol. 27, no.1-2, pp. 206-219, 2009. Top 15 papers from CRV'2006 conference were invited to this special issue.

10. R. Szeliski, R.Zabih, D. Scharstein, O. Veksler, V. Kolmogorov, A. Agarwala, M. Tappen, C. Rother, "A Comparative Study of Energy Minimization Methods for Markov Random Fields", *IEEE Transactions on Pattern Analysis and Machine Intelligence* (TPAMI), vol. 30, no. 6, pp. 1068-1080, 2008.

11. O. Veksler, "Stereo Correspondence with Compact Windows via Minimum Ratio Cycle", in *IEEE Transactions on Pattern Analysis and Machine Intelligence* (TPAMI), vol. 24, no.12, pp. 1654-1660, 2002.

12. O. Veksler, "Dense Features for Semi-Dense Stereo Correspondence", *International Journal of Computer Vision* (IJCV), vol. 47, no.1-3, pp. 247-260, 2002.

13. Y. Boykov, O. Veksler, R. Zabih, "Fast Approximate Energy Minimization via Graph Cuts", in *IEEE Transactions on Pattern Analysis and Machine Intelligence* (TPAMI), vol. 23, no. 11, pp. 1222-1239, 2001.

14. Y. Boykov, O. Veksler, R. Zabih, "A Variable Window Approach to Early Vision", in *IEEE Transactions on Pattern Analysis Machine Intelligence* (TPAMI), vol. 20, no. 12, pp. 1283-1294, 1998.

4.6 Refereed Conference Proceedings

1. J. Wu, O. Veksler, "Learning Regularization Weight for CRF Optimization ", in British Machine Vision Conference (BMVC), 2018, (12 pages). Acceptance rate 29% (255/862)

2. H. Isack, L. Gorelick, K. Ng, O. Veksler, Y. Boykov , "K-convexity Shape Priors for Segmentation", in European Conference on Computer Vision (ECCV), 2018, (14 pages).

3. L. Gorelick, O. Veksler, "Multi Object Convexity Shape Prior for Segmentation ", in *Energy Minimization Methods in Computer Vision and Pattern Recognition* (EMMCVPR), 14 pages, 2017.

4. L. Gorelick, O. Veksler, "Double Expansion for Optimization of Multilabel Energies", in British Machine Vision Conference (BMVC), 2017, (12 pages). Acceptance rate for an oral presentation 6% (36/635)

5. L. Gorelick, Y. Boykov, O. Veksler, "Adaptive and Move-Making Auxiliary Cuts for Binary Pairwise Energies", in IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2017, (8 pages). Acceptance rate 29% (783/2620)

6. H. Isack, O. Veksler, I. Oguz, M. Sonka, and Y. Boykov, "Efficient optimization for Hierarchically-structured Interacting Segments (HINTS)", in IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2017, (8 pages). Acceptance rate 29% (783/2620)

7. H.Isack, O.Veksler, M.Sonka, Y.Boykov "Hedgehog Shape Priors for Multi-Object Segmentation", in IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Las Vegas, US, June 2016, (8 pages). Acceptance rate 9.7% (206/2145)

8. E. Lobacheva, O. Veksler, Y. Boykov "Joint Optimization of Segmentation and Color Clustering", in *International Conference on Computer Vision* (ICCV), 2015. Acceptance rate: 30.3% (525/ 1698).

9. O. Veksler, "Efficient Parallel Optimization for Potts Energy with Hierarchical Fusion", in *IEEE Computer Vision and Pattern Recognition* (CVPR), 8 pages, 2015, acceptance rate: 28% (602/2123).

10. L. Gorelick, O. Veksler, Y. Boykov, C. Nieuwenhuis, "Convexity Shape Prior for Segmentation", in *European Conference on Computer Vision* (ECCV), 14 pages, 2014. Acceptance rate 3% (38/1444).

11. L. Gorelick, Y. Boykov O. Veksler and Y. Boykov , I. B. Ayed, A. Delong, "Submodularization for Binary Pairwise Energies", in *IEEE Computer Vision and Pattern Recognition* (CVPR), 8 pages, 2014, acceptance rate for oral prentation: 6% (104/1807).

12. C. Nieuwenhuis, E. Toeppe, L. Gorelick, O. Veksler and Y. Boykov , "Efficient Squared Curvature", in *IEEE Computer Vision and Pattern Recognition* (CVPR), 8 pages, 2014, acceptance rate: 30% (540/1807).

13. M. Tang, L. Gorelick, O. Veksler, Y. Boykov, "GrabCut in one cut", in *International Conference on Computer Vision* (ICCV), 2013, Acceptance rate: 30% (454/1629).

14. A. Delong, O. Veksler, A. Osokin, Y. Boykov , "Minimizing Sparse High-Order Energies by Submodular Vertex-Cover", in *Neural Information Processing Systems* (NIPS), 2012, Acceptance rate: 25% (370/1467).

15. A. Delong, O. Veksler, Y. Boykov, "Fast Fusion Moves for Multi-model Estimation", in *European Conference on Computer Vision*, 2012 (ECCV), pp. 370-385, Acceptance rate: 25%.

16. O. Veksler, "Dynamic Programming for Approximate Expansion Algorithm", *European Conference on Computer Vision*, 2012 (ECCV), pp. 852-866, Acceptance rate: 25%.

17. J. Bai, Q. Song, O. Veksler, X. Wu, "Fast dynamic programming for labeling with ordering constraints", in *IEEE Computer Vision and Pattern Recognition* (CVPR), 8 pages, 2012, acceptance rate: 24% (465/1933).

18. L. Gorelick, A. Delong, O. Veksler, Y. Boykov, "Recursive MDL via Graph Cuts: Application to Segmentation", in *International Conference on Computer Vision* (ICCV), 8 pages, 2011. Acceptance rate: 24% (339/1433).

19. A. Delong, L. Gorelick, F. R. Schmidt, O. Veksler, Y. Boykov, "Interactive Segmentation with Super Labels", in *Energy Minimization Methods in Computer Vision and Pattern Recognition* (EMMCVPR), 14 pages, 2011.

20. A. Jezierska, H. Talbot, O. Veksler, D. Wesierski, "A fast solver for truncated-convex priors: quantized-convex split moves", in *Energy Minimization Methods in Computer Vision and Pattern Recognition* (EMMCVPR), 14 pages, 2011.

21. V. Vakili, O. Veksler, "Object Class Segmentation using Reliable Regions", in *Asian Conference on Computer Vision* (ACCV), 14 pages, 2010. Acceptance rate: 29.1% (215/739).

22. P. Mehrani, O. Veksler, "Saliency Segmentation based on Learning and Graph Cut Refinement", in *British Machine Vision conference* (BMVC), 12 pages, 2010. Acceptance rate for oral presentation: 8.6% (30/345).

23. O. Veksler, Y. Boykov, P. Mehrani, "Superpixels and Supervoxels in an Energy Optimization Framework", in *European Conference on Computer Vision* (ECCV), 14 pages, 2010. Acceptance rate 27.4% (322/1174).

24. P.F. Felzenszwalb, O. Veksler, "Tiered Scene Labelling with Dynamic Programming", in *IEEE Computer Vision and Pattern Recognition* (CVPR), 8 pages, 2010. Acceptance rate for oral presentation 4.5% (78/1733).

25. Y. Liu, O. Veksler, "Animated Classic Mosaics from Video", in *International Symposium on Advances in Visual Computing* (ISVC), (2) 2009, pp. 1085-1096.

26. O. Veksler, "Multi-label Moves for MRFs with Truncated Convex Priors", in *7th International Conference on Energy Minimization Methods in Computer Vision and Pattern Recognition* (EMMCVPR), pp. 1-13, 2009. Acceptance rate for oral presentation: 24% (18/75).

27. O. Veksler, "Star Shape Prior for Graph-Cut Image Segmentation", in *European Conference on Computer Vision* (ECCV), vol. 3, pp. 454-467, 2008. Acceptance rate: 27.9% (243/871).

28. B. Peng, O. Veksler, "Parameter Selection for Graph Cut Based Image Segmentation ", in *British Machine Vision conference* (BMVC). Acceptance rate: 48% (123/256).

29. X. Liu, O. Veksler, J. Samarabandu, "Graph Cut with Ordering Constraints on Labels and its Applications", in *IEEE Computer Vision and Pattern Recognition* (CVPR), pages 1-8. Acceptance rate: 31% (508/1593).

30. Y. Liu, O. Veksler, O. Juan, "Simulating Classic Mosaics with Graph Cuts", in *6th International Conference on Energy Minimization Methods in Computer Vision and Pattern Recognition* (EMMCVPR), pp. 55-70. Acceptance rate for oral presentation: 15.7% (22/140).

31. O. Veksler, "Graph Cut Based Optimization for MRFs with Truncated Convex Priors", in *IEEE Computer Vision and Pattern Recognition* (CVPR), pp. 1-8, electronic edition, 2007. Acceptance rate: 28.1% (351/1250).

32. O. Veksler, "Reducing Search Space for Stereo Correspondence with Graph Cuts", in *British Machine Vision conference* (BMVC) vol. 2, pp. 709-719, 2006. Acceptance rate: 28.4% (127/447).

33. P. Das, O. Veksler, V. Zavadsky, Y. Boykov, "Semiautomatic Segmentation with Compact Shape Prior", in *Canadian Conference on Computer and Robot Vision*(CRV), pp. 28-36, 2006. Acceptance rate for oral presentation: 35% (35/110).

34. P.Das, O. Veksler, V. Zavadsky, Y. Boykov, "Semiautomatic Segmentation of Transistor Gates in Integrated Chips", in *2nd Workshop on Applications of Computer Vision, in Conjunction with 9th European Conference on Computer Vision*, pp. 14-22, 2006.

35. R. Szeliski, R.Zabih, D. Scharstein, O. Veksler, V. Kolmogorov, A. Agarwala, M. Tappen, C. Rother, "A Comparative Study of Energy Minimization Methods for Markov Random Fields", in *European Conference on Computer Vision*(ECCV), vol. 2, pp. 16-29, 2006. Acceptance rate for oral presentation: 4.4% (40/900).

36. O. Veksler, "Stereo Correspondence by Dynamic Programming Tree", in *IEEE Computer Vision and Pattern Recognition* (CVPR), vol. 2, pp. 384-390, 2005. Acceptance rate for oral presentation: 6.5% (74/1160).

37. O. Veksler, "Extracting Dense Features for Visual Correspondence with Graph Cuts", in *IEEE Computer Vision and Pattern Recognition* (CVPR), vol. 1, pp. 689-694, 2003. Acceptance rate 23.1% (209/905).

38. O. Veksler, "Fast Variable Window for Stereo Correspondence using Integral Images", in *IEEE Computer Vision and Pattern Recognition*(CVPR), vol. 1, pp. 556-561, 2003. Acceptance rate for oral presentation 6.6% (149/905).

39. O. Veksler, "Semi-Dense Stereo Correspondence with Dense Features", in *IEEE Computer Vision and Pattern Recognition* (CVPR), vol. 2, pp. 490-497, 2001. Acceptance rate: 30% (273/920).

40. O. Veksler, "Semi-Dense Stereo Correspondence with Dense Features", in *IEEE Workshop on Stereo and Multi-Baseline Vision*, pp. 149-157, 2001.

41. O. Veksler, "Stereo Matching by Compact Windows via Minimum Ratio Cycle", in *IEEE International Conference on Computer Vision*(ICCV), vol. 1, pp. 540-547, 2001. Acceptance rate: 34%.

42. O. Veksler, "Image Segmentation by Nested Cuts", in *IEEE Computer Vision and Pattern Recognition*(CVPR), pp. 339-344, 2000. Acceptance rate for oral presentation: 14.2% (66/466).

43. Y. Boykov, O. Veksler, R. Zabih, "Fast Approximate Energy Minimization via Graph Cuts", in *IEEE International Conference on Computer Vision*(ICCV), pp.377-384, 1999. Acceptance rate: 31%.

44. Y. Boykov, O. Veksler, R. Zabih, "A New Algorithm for Energy Minimization with Discontinuities", in *IEEE International Workshop on Energy Minimization Methods in Computer Vision*, pp.205-220, 1999.

45. Y. Boykov, O. Veksler, R. Zabih, "Markov Random Fields with Efficient Approximations", in *IEEE Conference on Computer Vision and Pattern Recognition* (CVPR), pp. 648-655, 1998. Acceptance rate for oral presentation: 9% (42/453).

46. Y. Boykov, O. Veksler, R. Zabih, "Disparity Component Matching for Visual Correspondence", in *IEEE Conference Computer Vision and Pattern Recognition*(CVPR), pp. 470-475, 1997. Acceptance rate: 32% (173/544).

4.7 Refereed Abstracts

1. Lena Gorelick, Olga Veksler, Jose A. Gomez, Madeleine Moussa, A. Fenster, G. Bauman, A. D. Ward, "Towards Accurate and Reptroducible Tumour Size Quantification via Semi-Supervised Segmentation", in *Imaging Network Ontario Symposium*, 2011.

Notes:

- The main method of dissemination in the field of computer vision is through conferences, because the research is moving quickly and the turnaround journal time is between 1-3 years.
- Acceptance rates are indicated, if known.
- The top conferences in the computer vision field are:
    1. *IEEE Computer Vision and Pattern Recognition* (CVPR)
    2. *International Conference on Computer Vision*(ICCV)
    3. *European Conference on Computer Vision* (ECCV)
- Top journals in the computer vision field are:
    1. *IEEE Transactions on Pattern Recognition and Machine Intelligence* (TPAMI), impact factor 5.96 in 2010

2. *International Journal of Computer Vision* (IJCV), impact factor 4.93 in 2010

- Top journal in the medical image processing field:

  1. *IEEE Transactions on Medical Image Processing* (TMI), impact factor 4.027 in 2012

- Top journal in the machine learning field:

  1. *International Journal of Machine Learning* (IJML), impact factor 2.95 in 2010

5 Talks

5.1 Keynote Talks

- " Pixel Labeling Problems With Structured Layout", International Conference on Energy Minimization Methods in Computer Vision and Pattern Recognition (EMMCVPR), keynote talk, August 2013

5.2 Invited Talks

- "Efficient Graph Cut Optimization for Full CRFs with Quantized Edges", Seminar, Institute of Science and Technology (IST) , Austria, December 2017.
- "Convexity and Other Shape priors for Single and Multiple Object Segmentation", Variational methods and effective algorithms for imaging and vision, Isaac Newton Institute, Cambridge, UK, December 2017.
- "Efficient Graph Cut Optimization for Full CRFs with Quantized Edges", Seminar, Disney Research, Zurich, Switzerland, December 2017.
- "Efficient Graph Cut Optimization for Full CRFs with Quantized Edges", Seminar, University of Oxford, Oxford, UK, November 2017.
- "Efficient Graph Cut Optimization for Full CRFs with Quantized Edges", Seminar, Edinburgh University, Edinburgh, UK, October 2017.
- "Adaptive and Move Making Auxiliary Cuts for Binary Pairwise Energies", Variational methods and effective algorithms for imaging and vision, Isaac Newton Institute, Cambridge, UK, September 2017.
- "Efficient Discrete Optimization for Binary Energies with Applications to Image Segmentation", seminar, university of Waterloo, June 2017.
- "Adaptive and Move Making Auxiliary Cuts for Binary Pairwise Energies", Seminar, Center for Intelligent Machines, McGill University, May 2017.
- "Adaptive and Move Making Auxiliary Cuts for Binary Pairwise Energies", Seminar, Ecole de Technologie Superieure (ETS), May 2017.

- "Efficient Discrete Optimization for Binary Energies with Applications to Image Segmentation", Seminar, Computing and Software Department, McMaster University, November 2016.
- "Shape priors for Image segmentation", Canadian Conference on Computer and Robot Vision, Shape and Segmentation Symposia, May 2014.
- "Graph-based optimization theories and approaches", MedIA Series, Robarts, June 2013
- "Optimization for Pixel Labelling Problems with Structured Layout", Dagstuhl Seminar on 'Efficient Algorithms for Global Optimisation Problems in Computer Vision", Dagstuhl, Germany, November, 2011
- "Optimization for Pixel Labelling Problems with Structured Layout", Moscow State University, Russian Federation, July 2011
- "Optimization for Pixel Labelling Problems with Structured Layout", Czech Technical University , Czech Republic, April 2011
- "Optimization for Pixel Labelling Problems with Structured Layout", Microsoft Research Cambridge, UK, March 2011
- "Optimization for Pixel Labelling Problems with Structured Layout", Paris University 13, France, March 2011
- "Optimization for Pixel Labelling Problems with Structured Layout", Ecole Centrale Paris, France, February 2011
- "Optimization for Pixel Labelling Problems with Structured Layout", TELECOM ParisTech, Paris, France, January 2011
- "Optimization for Pixel Labelling Problems with Structured Layout", University Pierre et Marie Curie, Paris, France, December 2010
- "Optimization for Pixel Labelling Problems with Structured Layout", University College London, London, UK, 2010
- "Optimization for Pixel Labelling Problems with Structured Layout", Willow (Ecole Normale Superieure/INRIA), Paris, France, 2010
- "Optimization for Pixel Labelling Problems with Structured Layout", ESIEE, Paris, France, 2010
- "Optimization for Pixel Labelling Problems with Structured Layout", Oxford University, Oxford, UK, 2010
- "Optimization for Pixel Labelling Problems with Structured Layout", Graphical Models workshop, Heidelberg University, Germany, 2010
- "Optimization for Pixel Labelling Problems with Structured Layout", Technical University of Munich, Germany, 2010

- "Approximate Scene Geometry From a Single View through Learning and Optimization", Steklov Institute of Mathematics, St. Petersburg, Russia, 2010
- "Optimization for Pixel Labelling Problems with Structured Layout", York University, Toronto, Canada, 2010
- "Generating Classic Mosaics Automatically with Graph Cuts", Microsoft MRF Workshop, University of Cambridge, UK, 2008
- "Multi-Label Moves for Multi-Label Energies", University of Pennsylvania, 2008.
- "Multi-Label Moves for Multi-Label Energies", Workshop on Graph Cuts and Related Discrete or Continuous Optimization Problems, Institute for Pure and Applied Mathematics (IPAM), Los Angeles, 2008.
- "Simulating Classic Mosaics with Graph Cuts", Moscow State University, 2007.
- "Graph Algorithms in Computer Vision", University of Toronto, 2005.
- "Graph Algorithms in Computer Vision", University of Western Ontario, 2003.
- "Graph Algorithms in Computer Vision", University of Michigan at Ann Arbor, 2003.
- "Compact Windows for Visual Correspondence via Minimum Ratio Cycle Algorithm", ALLADIN Workshop on Graph Partitioning in Vision and Machine Learning, Carnegie Mellon University, Pittsburgh, 2003.
- "Graph Algorithms in Computer Vision", Dartmouth College 2003.
- "Graph Algorithms for Stereo Correspondence", Princeton University 2002.
- "Graph Algorithms for Stereo Correspondence", University of Chicago, 2002.
- "Graph Algorithms for Stereo Correspondence", Massachusetts institute of Technology, 2002.
- "Graph Algorithms for Stereo Correspondence", Brown University, 2002.
- "Graph Algorithms for Stereo Correspondence", University of Wisconsin-Madison, 2002.
- "Graph Algorithms for Stereo Correspondence", Michigan State University, 2002.
- "Labeling Problem in image processing", New York University medical center, 2002.
- "Fast Energy Minimization for Computer Vision via Graph Cuts", DIMACS Workshop on Graph Theoretic Methods in Computer Vision, Rutgers, New Jersey, 1999.
- "Fast Energy Minimization for Computer Vision via Graph Cuts", NEC Research Institute, Princeton, 1999.

6 Research Funding

1. NSERC discovery grant, "Discrete Optimization Methods for Computer Vision", $50,000 per year, for a period of five years, 2017-2022.

2. NSERC discovery grant, "Energy Minimization Approach to Pixel Labeling Problems in Computer Vision", $42,000 per year, for a period of five years, 2012-2017.

3. NSERC Discovery Accelerator Supplement (DAS), $120,000, for a period of three years, 2012-2015.

4. Early Researcher award, "Image Based 3D Modeling from Multiple Cameras", $140,000 for a period of five years, 2009.

5. NSERC discovery grant, "Discrete optimization methods and their applications in computer vision", $26,000 per year for a period of five years, 2007-2012.

6. Grant from Semiconductor Insights, $7,000, for a period of one year, 2006.

7. CFI/MEDT new opportunities grant, "Laboratory for Image-based 3D Modelling Technologies", co-pi, total amount is $436,792, my part is $218,396 lump sum, 2006. Co-pi Yuri Boykov.

8. NSERC discovery grant, "Parameter estimation in graph cut based optimization methods", $23,500 per year for a period of three years, 2004-2007.

9. UWO, start up grant, $50,000 to cover a period of three years, 2003-2006.

6.1 Supervision of Students

Undergraduate Honours Theses Supervised

1. Soad M. Shanta , Fall 2011-May 2012, thesis title "Interactive Labelling and Seam Carving for Image Resizing".

2. Peng Jia, Fall 2006 - May 2007, thesis title "Via Detection in Integrated Chips Images with Ada-Boost".

Graduate Students Supervised

1. Zhenyi Wang Fall 2016-current, M.Sc., thesis title TBD

2. Jiaxio Wu Fall 2016-current, M.Sc., thesis title TBD

3. Yemin Li Spring 2015-Fall 2015, M.Sc., thesis title "A Modified Graph Cut Algorithm: Locally Adaptive Smoothness Term"

4. Jiaqui Zhou, Fall 2015-Winter 2017, M.Sc., thesis title " Color Separation for Background Subtraction"

5. Danfeng Chen Fall 2014-Fall2016, M.Sc., thesis title " Interactive Brain Tumor Segmentation with Inclusion Constraints"

6. Xinze Liu Fall 2014-Winter 2015, M.Sc., thesis title " Symmetry Shape Prior for Object Segmentation"

7. Xuefeng Chang, Fall 2012-Winter 2013, M.Sc., thesis title "Automatic Multi-Model Fitting for Blood Vessel Extraction". Currently at Amazon.

8. Liqun Liu, Fall 2012-Winter 2013, M.Sc., thesis title "Brain tumor segmentation with minimal user assistance". Currently at IBM.

9. Wei Li, Fall 2011-Winter 2012, M.Sc., thesis title "Automatic Foreground Initialization for Binary Image Segmentation". Currently at NTT DATA.

10. Junwei Sun, Fall 2011-Winter 2012, M.Sc., thesis title "Automatic Classification of Epilepsy Lesions". Currently Ph.D. student at York University.

11. Yu Liu, Winter 2007-Fall 2011, Ph.D., thesis title "Classic Mosaics and Visual Correspondence via Graph-Cut based Energy Optimization". Currently at Google.

12. Paria Mehrani, Winter 2008-Winter 2010, M.Sc., thesis title "Automatic Salient Object Detection and Segmentation". Currently Ph.D. student at York University.

13. Vida Vakili , Winter 2008-Winter 2010, M.Sc., thesis title "Pixel-precise Object Detection using Reliable Regions". Currently at BMO financial group.

14. Joseph Gomes, summer 2008, M.Sc. course work student, project title "Face detection with AdaBoost".

15. Bo Peng, Fall 2006-Winter 2008, M.Sc. student, thesis title "Parameter selection for graph cut based image segmentation", currently Assistant Professor at the Southwest Jiaotong University, China.

16. Robert Luong, joint supervision with Yuri Boykov, Fall 2006- Winter 2008, M.Sc., thesis title "Pictorial Structures for 3D Face Detection". Currently at National Defence Headquarters.

17. Yu Liu, Fall 2005-Fall 2006, thesis title "Rendering Decorative Mosaics with Graph-Cuts". Continued as Ph.D. student under my supervision.

18. Piali Das, Fall 2004-Winter 2006, M.Sc., thesis title "Semiautomatic Segmentation with Compact Shape Prior". Currently at GE Imaging Desktop, USA.

Postdoctoral Fellows Supervised

Note: all postdoctoral fellows were supervised jointly with Yuri Boykov, computer science department

1. L. Gorelick, 2009-current

2. C. Nieuwenhuis, 2013, moved to PDF at University of California, Berkeley

3. E. Toeppe, 2013, moved to PDF at University of California, Berkeley

4. A. Delong, 2011 moved to NSERC PDF at University of Toronto

5. O. Juan, 2008, moved to PDF at Ecole Centrale de Paris, France

Graduate Student Advisory Committee

1. Parisa Alvandi, Ph.D., defended May 2017
2. Shuang Ao, Ph.D., defended April 2017
3. Abdulwahab Kabani, Ph.D., defended April 2017
4. Rui Hu, Ph.D., defended April 2017
5. Taraneh Khazaei November 2016 PhD
6. Kyle Doerr, Ph.D., defended January 2016
7. Nima Mirbakhsh, Ph.D. defended August 2015
8. Akila M.S Subasinghe, Ph.D., defended July 2014
9. Brandon Miles, Ph.D., defended January 2014
10. Mohammad Nambakhsh, Ph.D., defended September 2013
11. Seyed Nima Mirbakhsh, Ph.D., in progress
12. Mark Brothy, Ph.D., in progress
13. Brandon Miles, Ph.D., defended January 2014
14. Taha Kowsari, Ph.D., defended September 2013
15. Vadim Mazalov, Ph.D., defended May 2013
16. Eileen Ni, Ph.D., defended August 2012
17. Guo Mei, Ph.D., defended August 2011

Graduate Students Examinations

1. Farnam Mansouri , M.Sc., April 2014
2. Ekananta Manalif, M.Sc., March 2013
3. Mohammad Nambakhsh, Ph.D., September 2013
4. Sheik Mamun-Ul Hoque, M.Sc., December 2011
5. Nivedita Patil, M.Sc., June 2010
6. Mahnaz Ahmadian, M.Sc., May 2008
7. Ranga Rodrigo, Ph.D., December 2007
8. Laurentiu Dragon, Ph.D., September 2007
9. Yue Zhao, M.Sc., April 2007

10. Zhenhe Chen, Ph.D., August 2006

11. Peng Xu, M.Sc., December 2005

12. Jasbir Patel, M.Sc., August 2005

External Examinations

1. Johannes Ulen, PhD thesis, Lund University, Sweden, December 2014.

2. Hugues Talbot, Habilitation Thesis, Universite Paris-Est, France, December 2013

3. Yuhang Zhang, Australian National University, Australia, Ph.D., September 2012

7 Software

1. Software for superpixel segmentation in C++, available from *http://www.csd.uwo.ca/faculty/olga/code.html*

2. I have developed software for graph-cuts based energy minimization in C++, available from my website: *http://www.csd.uwo.ca/faculty/olga/code.html*. Most of the methods this software implements were developed by me and my co-authors. This software is downloaded about 10 times per day, *http://vision.csd.uwo.ca/downloadlog.html*.

8 Patents

1. R. Zabih, Y. Boykov, O. Veksler, "System and method for fast approximate energy minimization via graph cuts ", United Stated Patent 6,744,923, June 1, 2004. Microsoft Research has obtained non-exclusive rights to this patent in July 2005. Google has obtained non-exclusive rights to this patent in December 2006.

9 Professional Activities

9.1 Grant Evaluation

1. Member of NSERC Discovery Grants Computer Science Evaluation Group, 2014-2016.

9.2 Journal Editorial Boards

1. International Journal of Computer Vision (IJCV), Associate Editor, 2013-
2. Computer Vision and Image Understanding (CVIU), Associate Editor, 2013-

9.3 Conference Organization

1. Area Chair, *International Conference on Computer Vision* (**ECCV**), September 2018.
2. Area Chair, *International Conference on Computer Vision* (**ICCV**), October 2017.
3. Area Chair, *International Conference on Computer Vision* (**ICCV**), December 2015.
4. Area Chair, *IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), June 2015.
5. Area Chair, *IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), June 2014.
6. Area Chair, *IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), June 2011.
7. Area Chair, *IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), June 2010.
8. Co-Organizer of *6th IEEE Computer Society Workshop on Perceptual Organization in Computer Vision*, in conjunction with *IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), June 2008.

9.4 Conference Program Committees

1. Program Committee *IEEE Conference on Computer Vision and Pattern Recognition* (CVPR) 2000, 2003-20013, 2016-2017. Reviewing load is, on average, 14 papers per year.
2. Program Committee *International Conference on Computer Vision* (ICCV) 2001, 2003, 2005, 2007, 2009, 2011, 2013. Reviewing load is, on average, 14 papers per year.
3. Program Committee *European Conference on Computer Vision* (ECCV) 2006, 2008, 2010, 2012, 2014, 2016. 12 Reviewing load is, on average, 12 papers per year.
4. Program Committee *Energy Minimization Methods in Computer Vision and Pattern Recognition* (EMMCVPR) 2009, 2011, 2013. Reviewing load is, on average, 5 papers per year.

5. Program Committee *Canadian Conference on Computer and Robot Vision* (CRV) 2004-2015. Reviewing load is, on average, 3 papers per year.

6. Program Committee *International Conference on Pattern Recognition* (ICPR) 2006, 2008. Reviewing load is, on average, 13 papers per year.

7. Program Committee *GraphiCon* 2008. Reviewing load was 6 papers.

8. Program Committee *IEEE Second workshop Towards Benchmarking Automated Calibration, Orientation, and Surface Reconstruction from Images* 2007. Reviewing load was 2 papers.

10 University Service

10.1 Departmental Committees

Committee Name	**Year**
Member of Workload Committee	2016-present
Member of Timetable Committee	2015-present
Member of Promotion and Tenure	2011-2014
Undergraduate Counselling Committee	2011-current
Member of GEC	2009-2011
Member of Workload Committee	2009-2011
Chair of Graduate Scholarship Committee	2008-2010
Member of Outreach Committee	2005-2009
Member of Appointments Committee	2005-2006
Member of Curriculum Committee	2004-2006

10.2 Other University Committees

Committee Name	**Year**
Member of Electrical and Computer Engineering Promotion and Tenure Committee	2016-current
Member of Mechanical and Materials Engineering Promotion and Tenure Committee	2015-current
Member of Western RTI Expert Panel	2015-current

10.3 Other University Service

- I participated in NSERC Discovery Grant Peer Mentorship sessions in 2014, 2015.
- I participated in four university open houses in 2007, 2009, and 2012.
- I visited a high school for an outreach activity in 2013
- I have participated as a judge in UWORCS conference in 2009, 2010, 2012,2014,2015
- I have given TRICS seminar talk in 2008, 2011, 2012, 2013, 2014, 2015
- I serve as a chair for about 4-5 MSc defenses per year
- I chaired two PhD defenses at other departments