Vladimir Kolmogorov

Email: vnk@ist.ac.at
Phone: +43 (0) 2243 9000 4801
Fax: +43 (0) 2243 9000 2000
http://pub.ist.ac.at/~vnk/

Am Campus 1
IST Austria
3400 Klosterneuburg
Austria

Education

- **Cornell University**, Ithaca, NY (1999-2003).
  PhD in Computer Science (2003).
  MS in Computer Science (2002).

- **Moscow Institute of Physics and Technology**, Russia (1994-1999).
  MS in Applied Mathematics and Physics.

Professional experience

- **Institute of Science and Technology (IST)**, Austria (October 2014 - current). Professor.
- **Institute of Science and Technology (IST)**, Austria (September 2011 - September 2014). Assistant Professor.
- **University College London**, UK (October 2005 - August 2011). Lecturer.
- **Microsoft Research**, Cambridge, UK (December 2009 - June 2010). Consultant.
- **Microsoft Research**, Cambridge, UK
  (February - December 2006; July 2007 - June 2008; December 2008 - June 2009). Visiting Researcher.
- **Microsoft Research**, Cambridge, UK (October 2003 - October 2005). Associate Researcher.
- **Siemens Corporate Research, Imaging Department**, Princeton, NJ
  (Summer 2000, Summer 2001). Intern.
- **Weill Medical College, Department of Radiology**, New York, NY (Spring 2001).
  Visiting Research Assistant.

Publications

Book Chapters

- T. Schoenemann, V. Kolmogorov. "Generalized sequential tree-reweighted message passing". In *Advanced Structured Prediction*, eds. Sebastian Nowozin, Peter V. Gehler, Jeremy Jancsary and Christoph Lampert, MIT Press, 2014.
- V. Kolmogorov. "Tree-reweighted Message Passing". In *Tractability: Practical Approaches to Hard Problems, Cambridge University Press*, 2014.
- Y. Boykov, V. Kolmogorov. "Basic Graph Cut Algorithms". In *Advances in Markov Random Fields for Vision and Image Processing, MIT Press*, 2011.
- C. Rother, V. Kolmogorov, Y. Boykov, A. Blake. "Interactive Foreground Extraction using graph cut". In *Advances in Markov Random Fields for Vision and Image Processing, MIT Press*, 2011.
- A. Criminisi, G. Cross, A. Blake, V. Kolmogorov. "Bilayer Segmentation of Video". In *Advances in Markov Random Fields for Vision and Image Processing, MIT Press*, 2011.

◇ 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, MIT Press*, 2011.

◇ M. Pawan Kumar, V. Kolmogorov, P. H. S. Torr. "Analyzing Convex Relaxations for MAP Estimation". In *Advances in Markov Random Fields for Vision and Image Processing, MIT Press*, 2011.

◇ S. Vicente, V. Kolmogorov, C. Rother. "Graph-cut Based Image Segmentation with Connectivity Priors". In *Advances in Markov Random Fields for Vision and Image Processing, MIT Press*, 2011.

◇ V. Kolmogorov, R. Zabih. "Graph Cut Algorithms for Binocular Stereo with Occlusions". In *Mathematical Models in Computer Vision: The Handbook, Springer-Verlag*, 2005.

Journals

◇ Martin Dvorak, Vladimir Kolmogorov. "Duality theory in linear optimization and its extensions – formally verified". Accepted to *Annals of Formalized Mathematics (AFM)*, 2025.

◇ Vladimir Kolmogorov, Simone Naldi and Jeferson Zapata. "Certifying solutions of degenerate semidefinite programs". *SIAM Journal on Optimization (SIOPT)*, 235(3):1630-1654, 2025.

◇ David G. Harris, Fotis Iliopoulos and Vladimir Kolmogorov. "A new notion of commutativity for the algorithmic Lovasz Local Lemma". *Theory of Computing (ToC)*, 21:1–34, 2025.

◇ Vladimir Kolmogorov. "A simpler and parallelizable $O(\sqrt{\log n})$-approximation algorithm for Sparsest Cut". *ACM Transactions on Algorithms (TALG)*, 21(4):1–22, 2025.

◇ David G. Harris and Vladimir Kolmogorov. "Parameter estimation for Gibbs distributions". *ACM Transactions on Algorithms (TALG)*, 21(1):1-39, 2024.

◇ M. Dvorak and V. Kolmogorov. "Generalized minimum 0-extension problem and discrete convexity". *Mathematical Programming (MP)*, 209:279–322, March 2024.

◇ Dimitris Achlioptas, Fotis Iliopoulos and Vladimir Kolmogorov. "A Local Lemma for Focused Stochastic Algorithms". *SIAM Journal on Computing (SICOMP)*, 48(5), 1583–1602, 2019.

◇ Vladimir Kolmogorov. "Commutativity in the Algorithmic Lovasz Local Lemma". *SIAM Journal on Computing (SICOMP)*, 47(6):2029–2056, 2018.

◇ Alexandr Kazda, Vladimir Kolmogorov and Michal Rolínek. "Even Delta-Matroids and the Complexity of Planar Boolean CSPs". *ACM Transactions on Algorithms (TALG)*, 15(2):1–33, 2018.

◇ V. Kolmogorov, A. Krokhin and M. Rolínek. "The Complexity of General-Valued CSPs". *SIAM Journal of Computing (SICOMP)*, 46(3):1087–1110, 2017.

◇ V. Kolmogorov, T. Pock and M. Rolínek. "Total variation on a tree". *SIAM Journal on Imaging Sciences (SIIMS)*, 9(2):605–636, 2016.

◇ V. Kolmogorov and M. Rolínek. "Superconcentrators of density 25.3". *Ars Combinatoria*, CXLI:269–304, October 2018.

◇ V. Kolmogorov and R. Takhanov. "Inference algorithms for pattern-based CRFs on sequence data". *Algorithmica*, 76(1):17–46, September 2016.

◇ V. Kolmogorov, J. Thapper and S. Živný. "The power of linear programming for general-valued CSPs". *SIAM Journal of Computing (SICOMP)*, 44(1):1-36, 2015.

◇ V. Kolmogorov. "A new look at reweighted message passing". *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)*, 37(5):919-930, May 2015.

◇ V. Kolmogorov, S. Živný. "The complexity of conservative valued CSPs". *Journal of ACM*, 60(2), April 2013.

◇ L. Torresani, V. Kolmogorov and C. Rother. "A Dual Decomposition Approach to Feature Correspondence". *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)*, 35(2):259–271, February 2013.

◇ V. Kolmogorov. "Minimizing a sum of submodular functions". *Discrete Applied Mathematics (DAM)*, 160(15):2246–2258, October 2012.

◇ V. Kolmogorov. "Generalized roof duality and bisubmodular functions". *Discrete Applied Mathematics (DAM)*, 160(4-5):416–426, March 2012.

◇ V. Kolmogorov. "A Faster Algorithm for Computing the Principal Sequence of Partitions of a Graph". *Algorithmica*, 56(4):394-412, April 2010.

◇ V. Kolmogorov and A. Shioura. "New Algorithms for Convex Cost Tension Problem with Application to Computer Vision". *Discrete Optimization (DO)*, 6(4):378-393, November 2009.

◇ V. Kolmogorov. "Blossom V: A new implementation of a minimum cost perfect matching algorithm". *Mathematical Programming Computation (MPC)*, 1(1):43-67, July 2009.

◇ M. Pawan Kumar, V. Kolmogorov and P. H. S. Torr. "An Analysis of Convex Relaxations for MAP Estimation of Discrete MRFs". *Journal of Machine Learning Research (JMLR)*, 10:71-106, January 2009.

◇ 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 with Smoothness-Based Priors". *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)*, 30(6):1068-1080, June 2008.

◇ V. Kolmogorov, C. Rother. "Minimizing Nonsubmodular Functions with Graph Cuts - A Review". *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)*, 29(7):1274-1279, July 2007.

◇ V. Kolmogorov. "Convergent Tree-reweighted Message Passing for Energy Minimization". *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)*, 28(10):1568-1583, October 2006.

◇ V. Kolmogorov, A. Criminisi, A. Blake, G. Cross, C. Rother. "Probabilistic Fusion of Stereo with Color and Contrast for Bilayer Segmentation". *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)*, 28(9):1480-1492, September 2006.

◇ C. Rother, V. Kolmogorov, A. Blake. "GrabCut - Interactive Foreground Extraction using Iterated Graph Cuts". *ACM Transactions on Graphics (SIGGRAPH)*, August 2004.

◇ Y. Boykov, V. Kolmogorov. "An Experimental Comparison of Min-Cut/Max-Flow Algorithms for Energy Minimization in Vision". *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)*, 26(9):1124-1137, September 2004.

◇ V. Kolmogorov, R. Zabih. "What Energy Functions can be Minimized via Graph Cuts?" *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)*, Special Issue on Energy Minimization Methods in Computer Vision and Pattern Recognition, 26(2):147-159, February 2004.

◇ V. Kolmogorov, T. D. Nguyen, A. Nuval, P. Spincemaille, M. R. Prince, R. Zabih, Y. Wang. "A Multi-processor Scheduling Implementation of the Simultaneous Multiple Volume (SMV) Navigator Method". *Journal of Magnetic Resonance in Medicine*, 52:362-367, 2004.

◇ V. Kolmogorov, R. Watts, M. R. Prince, R. Zabih, Y. Wang. "Simultaneous Multiple Volume (SMV) Acquisition Algorithm for Real-Time Navigator Gating". *Journal of Magnetic Resonance Imaging*, 21:9, pages 969-975, 2003.

Conferences

◇ Pavel Arkhipov, Vladimir Kolmogorov. "Faster algorithms for packing forests in graphs and related problems". In *ACM-SIAM Symposium on Discrete Algorithms (SODA)*, Vancouver, Canada, January 2026.

◇ Vladimir Kolmogorov. "A simpler and parallelizable $O(\sqrt{\log n})$-approximation algorithm for Sparsest Cut". In *36th ACM Symposium on Parallelism in Algorithms and Architectures (SPAA)*, June 2024.

◇ David G. Harris and Vladimir Kolmogorov. "Parameter estimation for Gibbs distributions". In *50th International Colloquium on Automata, Languages and Programming (ICALP)*, July 2023.

◇ Vladimir Kolmogorov. "Solving relaxations of MAP-MRF problems: Combinatorial in-face Frank-Wolfe directions". In *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, June 2023.

◇ Vladimir Kolmogorov and Thomas Pock. "One-sided Frank-Wolfe algorithms for saddle problems". In *International Conference on Machine Learning (ICML)*, July 2021.

◇ David G. Harris, Fotis Iliopoulos and Vladimir Kolmogorov. "A new notion of commutativity for the algorithmic Lovasz Local Lemma". In *Approximation, Randomization, and Combinatorial Optimization (RANDOM)*, August 2021.

◇ Vladimir Kolmogorov. "Testing the complexity of a valued CSP language". In *46th International Colloquium on Automata, Languages and Programming (ICALP)*, Patras, Greece, July 2019.

◇ Paul Swoboda and Vladimir Kolmogorov. "MAP inference via Block-Coordinate Frank-Wolfe Algorithm". In *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, Long Beach, CA, USA, June 2019.

◇ Vladimir Kolmogorov. "A Faster Approximation Algorithm for the Gibbs Partition Function". In *31st Conference on Learning Theory (COLT)*, Stockholm, Sweden, July 2018.

◇ Pritish Mohapatra, Michal Rolínek, C.V. Jawahar, Vladimir Kolmogorov and M. Pawan Kumar. "Efficient Optimization for Rank-based Loss Functions". In *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, Salt Lake City, USA, June 2018 (**best paper honorable mention award**).

◇ Alexandr Kazda, Vladimir Kolmogorov and Michal Rolínek. "Even Delta-Matroids and the Complexity of Planar Boolean CSPs". In *ACM-SIAM Symposium on Discrete Algorithms (SODA)*, Barcelona, Spain, January 2017.

◇ Vladimir Kolmogorov. "Commutativity in the Algorithmic Lovász Local Lemma". In *57th Annual IEEE Symposium on Foundations of Computer Science (FOCS)*, New Brunswick, USA, October 2016.

◇ Joël Alwen, Binyi Chen, Chethan Kamath, Vladimir Kolmogorov, Krzysztof Pietrzak and Stefano Tessaro. "On the Complexity of Scrypt and Proofs of Space in the Parallel Random Oracle Model". In *Eurocrypt*, Vienna, Austria, May 2016.

◇ Vladimir Kolmogorov, Michal Rolínek and Rustem Takhanov. "Effectiveness of Structural Restrictions for Hybrid CSPs". In *26th International Symposium on Algorithms and Computation (ISAAC)*, Nagoya, Japan, December 2015.

◇ Vladimir Kolmogorov, Andrei Krokhin and Michal Rolínek. "The Complexity of General-Valued CSPs". In *56th Annual IEEE Symposium on Foundations of Computer Science (FOCS)*, Berkeley, USA, October 2015.

◇ Stefan Dziembowski, Sebastian Faust, Vladimir Kolmogorov and Krzysztof Pietrzak. "Proofs of Space". In *CRYPTO*, Santa Barbara, USA, August 2015.

◇ Neel Shah, Vladimir Kolmogorov and Christoph H. Lampert. "A Multi-Plane Block-Coordinate Frank-Wolfe Algorithm for Training Structural SVMs with a Costly max-Oracle". In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Boston, USA, June 2015.

◇ I. Gridchyn, V. Kolmogorov. "Potts model, parametric maxflow and k-submodular functions". In *IEEE International Conference on Computer Vision (ICCV)*, Sydney, Australia, December 2013.

◇ C. Olsson, J. Ulén, Y. Boykov, V. Kolmogorov. "Partial Enumeration and Curvature Regularization". In *IEEE International Conference on Computer Vision (ICCV)*, Sydney, Australia, December 2013.

◇ V. Kolmogorov. "The power of linear programming for finite-valued CSPs: a constructive characterization". In *40th International Colloquium on Automata, Languages and Programming (ICALP)*, Riga, Latvia, July 2013.

◇ R. Takhanov, V. Kolmogorov. "Inference algorithms for pattern-based CRFs on sequence data". In *International Conference on Machine Learning (ICML)*, Atlanta, GA, USA, July 2013.

- ◇ Y. Bachrach, P. Kohli, V. Kolmogorov, M. Zadimoghaddam. "Optimal Coalition Structures in Cooperative Graph Games". In *AAAI Conference on Artificial Intelligence (AAAI-13)*, Bellevue, Washington, USA, July 2013.
- ◇ C. Chen, V. Kolmogorov, Y. Zhu, D. Metaxas, C. Lampert. "Computing the M most probable modes of a graphical model". In *16th International Conference on Artificial Intelligence and Statistics (AISTATS)*, Scottsdale, AZ, USA, April-May 2013.
- ◇ A. Huber, V. Kolmogorov. "Towards Minimizing k-Submodular Functions". In *2nd International Symposium on Combinatorial Optimization*, Athens, Greece, April 2012.
- ◇ V. Kolmogorov, S. Živný. "The complexity of conservative valued CSPs". In *ACM-SIAM Symposium on Discrete Algorithms (SODA)*, Kyoto, Japan, January 2012.
- ◇ V. Kolmogorov. "Submodularity on a tree: Unifying $L^\natural$-convex and bisubmodular functions". In *International Symposium on Mathematical Foundations of Computer Science (MFCS)*, Warsaw, Poland, August 2011.
- ◇ D. Tarlow, D. Batra, P. Kohli, V. Kolmogorov. "Dynamic Tree Block Coordinate Ascent". In *International Conference on Machine Learning (ICML)*, Bellevue, USA, June 2011.
- ◇ A. Osokin, D. Vetrov, V. Kolmogorov. "Submodular Decomposition Framework for Inference in Associative Markov Networks with Global Constraints". In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Colorado Springs, USA, June 2011.
- ◇ S. Vicente, C. Rother, V. Kolmogorov. "Object Cosegmentation". In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Colorado Springs, USA, June 2011.
- ◇ Y. Bachrach, V. Kolmogorov, P. Kohli. "Team Coverage Games". In *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, Taipei, Taiwan, May 2011.
- ◇ V. Kolmogorov. "Generalized roof duality and bisubmodular functions". In *Neural Information Processing Systems Conference (NIPS)*, Vancouver, Canada, December 2010.
- ◇ S.Vicente, V. Kolmogorov, C. Rother. "Cosegmentation Revisited: Models and Optimization". In *European Conference on Computer Vision (ECCV)*, Crete, Greece, September 2010.
- ◇ O. Woodford, C. Rother, V. Kolmogorov. "A Global Perspective on MAP Inference for Low-Level Vision". In *IEEE International Conference on Computer Vision (ICCV)*, Kyoto, Japan, October 2009.
- ◇ S.Vicente, V. Kolmogorov, C. Rother. "Joint optimization of segmentation and appearance models". In *IEEE International Conference on Computer Vision (ICCV)*, Kyoto, Japan, October 2009.
- ◇ L. Torresani, V. Kolmogorov, C. Rother. "Feature Correspondence via Graph Matching: Models and Global Optimization". In *European Conference on Computer Vision (ECCV)*, Marseille, France, October 2008.
- ◇ P. Kohli, A. Shekhovtsov, C. Rother, V. Kolmogorov and P. H. S. Torr. "On Partial Optimality in Multi-label MRFs". In *International Conference on Machine Learning (ICML)*, Helsinki, Finland, July 2008.
- ◇ S. Vicente, V. Kolmogorov and C. Rother. "Graph cut based image segmentation with connectivity priors". In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Anchorage, USA, June 2008.
- ◇ M. Pawan Kumar, V. Kolmogorov and P. H. S. Torr. "An Analysis of Convex Relaxations for MAP Estimation". In *Advances in Neural Information Processing Systems (NIPS)*, Vancouver, Canada, December 2007 (**honorable mention, outstanding student paper award**).
- ◇ V. Kolmogorov, Y. Boykov, C. Rother. "Applications of parametric maxflow in computer vision". In *IEEE International Conference on Computer Vision (ICCV)*, Rio de Janeiro, Brazil, October 2007.
- ◇ C. Rother, V. Kolmogorov, V. Lempitsky, M. Szummer. "Optimizing binary MRFs via extended roof duality". In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Minneapolis, USA, June 2007.

◇ C. Rother, V. Kolmogorov, T. Minka, A. Blake. "Cosegmentation of Image Pairs by Histogram Matching - Incorporating a Global Constraint into MRFs". In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, New York, USA, June 2006.

◇ A. Criminisi, G. Cross, A. Blake, V. Kolmogorov. "Bilayer Segmentation of Live Video". In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, New York, USA, June 2006.

◇ Y. Boykov, V. Kolmogorov, D. Cremers, A. Delong. "An integral solution to surface evolution PDEs via Geo-Cuts". In *European Conference on Computer Vision (ECCV)*, Graz, Austria, May 2006.

◇ V. Kolmogorov, C. Rother. "Comparison of energy minimization algorithms for highly connected graphs". In *European Conference on Computer Vision (ECCV)*, Graz, Austria, May 2006.

◇ R. Szeliski, R. Zabih, D. Scharstein, O. Veksler, V. Kolmogorov, A. Agarwala, M. Tappen, C. Rother. "Comparative Study of Energy Minimization Methods for Markov Random Fields". In *European Conference on Computer Vision (ECCV)*, Graz, Austria, May 2006.

◇ V. Kolmogorov, Y. Boykov. "What Metrics Can Be Approximated by Geo-Cuts, or Global Optimization of Length/Area and Flux". In *IEEE International Conference on Computer Vision (ICCV)*, Beijing, China, October 2005.

◇ V. Kolmogorov, M. Wainwright. "On the Optimality of Tree-reweighted Max-product Message Passing". In *Conference on Uncertainty in Artificial Intelligence (UAI)*, Edinburgh, Scotland, July 2005.

◇ V. Kolmogorov, A. Criminisi, A. Blake, G. Cross, C. Rother. "Bi-layer Segmentation of Binocular Stereo Video". In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, San Diego, CA, June 2005 (**best paper honorable mention award**).

◇ C. Rother, S. Kumar, V. Kolmogorov, A. Blake. "Digital Tapestry". In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, San Diego, CA, June 2005.

◇ R. Zabih, V. Kolmogorov. "Spatially Coherent Clustering with Graph Cuts". In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Washington, DC, June 2004.

◇ J. Kim, V. Kolmogorov, R. Zabih. "Visual Correspondence Using Energy Minimization and Mutual Information". In *IEEE International Conference on Computer Vision (ICCV)*, Nice, France, October 2003.

◇ Y. Boykov, V. Kolmogorov. "Computing Geodesics and Minimal Surfaces via Graph Cuts". In *IEEE International Conference on Computer Vision (ICCV)*, Nice, France, October 2003.

◇ V. Kolmogorov, R. Zabih. "Multi-camera Scene Reconstruction via Graph Cuts". In *European Conference on Computer Vision (ECCV)*, Copenhagen, Denmark, May 2002 (**best paper award**).

◇ V. Kolmogorov, R. Zabih. "What Energy Functions can be Minimized via Graph Cuts?" In *European Conference on Computer Vision (ECCV)*, Copenhagen, Denmark, May 2002 (**best paper award** and **Koenderink Prize at ECCV 2012**).

◇ V. Kolmogorov, R. Zabih. "Computing Visual Correspondence with Occlusions using Graph Cuts". In *IEEE International Conference on Computer Vision (ICCV)*, Vancouver, Canada, July 2001.

Workshops

◇ Amal Rannen-Triki, Maxim Berman, Vladimir Kolmogorov, Matthew B Blaschko. "Function norms for neural networks". In *ICCV workshop: Statistical Deep Learning for Computer Vision*, Seoul, Korea, October 2019.

◇ F. Korč, V. Kolmogorov, C. Lampert. "Approximating Marginals Using Discrete Energy Minimization". In *ICML Workshop: Inferning: Interactions between Inference and Learning*, Edinburgh, June 2012.

◇ V. Kolmogorov. "Convergent Tree-reweighted Message Passing for Energy Minimization". In *10^{th} International Workshop on Artificial Intelligence and Statistics (AISTATS)*, Barbados, January 2005.

◇ V. Kolmogorov, R. Zabih, S. Gortler. "Generalized Multi-camera Scene Reconstruction using Graph Cuts". In *4th International Workshop on Energy Minimization Methods in Computer Vision and Pattern Recognition (EMMCVPR)*, Lisbon, Portugal, July 2003.

◇ Y. Boykov, V. Kolmogorov. "An Experimental Comparison of Min-Cut/Max-Flow Algorithms for Energy Minimization in Vision". In *3rd International Workshop on Energy Minimization Methods in Computer Vision and Pattern Recognition (EMMCVPR)*, Sophia-Antipolis, France, LNCS 2134, p. 359, Springer, September 2001.

Technical Reports

◇ Martin Dvorak, Tristan Figueroa-Reid, Rida Hamadani, Byung-Hak Hwang, Evgenia Karunus, Vladimir Kolmogorov, Alexander Meiburg, Alexander Nelson, Peter Nelson, Mark Sandey, Ivan Sergeev. "Composition Direction of Seymour's Theorem for Regular Matroids – formally verified". arXiv technical report, September 2025.

◇ David Harris, Vladimir Kolmogorov. "Simple parallel estimation of the partition ratio for Gibbs distributions". arXiv technical report, May 2025.

◇ Vladimir Kolmogorov. "OrderedCuts: A new approach for computing Gomory-Hu tree". arXiv technical report, August 2022.

◇ Vladimir Kolmogorov. "A computational study of Gomory-Hu construction tree algorithms". arXiv technical report, August 2022.

Awards

◇ Best paper honorable mention award at IEEE/CVF Conference on Computer Vision and Pattern Recognition, 2018.

◇ ERC Consolidator Grant, 2014-2019.

◇ Koenderink Prize for fundamental contributions to computer vision at the European Conference on Computer Vision, 2012.

◇ Honorable mention, outstanding student paper award (to M. Pawan Kumar) at Neural Information Processing Systems Conference, 2007.

◇ The Royal Academy of Engineering/EPSRC Research Fellowship, 2006-2011.

◇ Best paper honorable mention award at IEEE Conference on Computer Vision and Pattern Recognition, 2005.

◇ Best paper award at the European Conference on Computer Vision, 2002.

◇ Soros grant, 1995.

◇ Second degree diploma at the Russian National Olympiad in Physics, 1994.

◇ Second degree diploma at the Russian National Olympiad in Physics, 1993.

◇ Fourth degree diploma at the Russian National Olympiad in Physics, 1993.

Professional activities

Event organisation:

◇ Co-chair of ÖAGM/AAPR Workshop, Klosterneuburg, May 2013

◇ Summer School on Image Processing (SSIP) 2012, Vienna

◇ International Programme Committee Co-Chair of GraphiCon 2008, Moscow, June 2008.

◇ 5-day IPAM Workshop on "Graph Cuts and Related Discrete or Continuous Optimization Problems", Los Angeles, February 2008.

Area chair:

◇ IEEE International Conference on Computer Vision (ICCV), 2015.

◇ IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2015.

◇ IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2013.

◇ European Conference on Computer Vision (ECCV), 2010.

Program committee:

◇ Symposium on Discrete Algorithms (SODA), 2021.

◇ European Conference on Computer Vision (ECCV), 2006, 2008.

◇ IEEE International Conference on Computer Vision (ICCV), 2005, 2007, 2009.

◇ IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2005, 2006, 2007, 2008, 2012.

◇ International Conference on Machine Learning (ICML), 2012.

◇ International Workshop on Energy Minimization Methods in Computer Vision and Pattern Recognition (EMMCVPR), 2009, 2013.

Reviewing activities:

- Journals: PAMI, JMLR, IJCV, SICOMP, TALG, DAM, DISOPT, COAP, JCSS, SIIMS
- Conferences: FOCS, STOC, SODA, ICCV, ECCV, CVPR, NeuRIPS, ICML, UAI, AISTATS, EMMCVPR