Vita

Peter Saveliev

Current research interests

Applications of computational topology in digital image analysis and data analysis.

Education

University of Illinois at Urbana-Champaign
Ph.D., Mathematics, 1999.
Thesis: *Fixed Points and Coincidences*.

Positions

- Assistant and Associate Professor, *Marshall University*, 2002 - present

- Visiting Assistant Professor, *Allegheny College*, 2000 - 2002

- Visiting Assistant Professor, *Wabash College*, 1999 - 2000

- Applied mathematician and software engineer, *Precision Instruments Institute and Kappa LTD, Moscow, Russia*, 1987-1993

Recent publications and presentations

- *A graph, non-tree representation of the topology of gray scale images,* Proceeding of SPIE, Vol. 7863, 2011.
- *Image analysis for high content screening with cellAnalyst* (with Joerg Meyer and Ash Pahwa), to appear in: The 9th IEEE International Conference on Bioinformatics and Bioengineering, June 22-24, 2009, Taichung, Taiwan.
- *Topology Based Method of Segmentation of Gray Scale Images,* Proceedings of International Conference on Image Processing, Computer Vision, and Pattern Recognition, July 2009, pp. 620-626.
- *Using MATLAB to process images for the analysis of plant organ growth and curvature* (with Harrison, Marcia; Silver, Donald; Sarra, Scott), 19th International Conference on Arabidopsis Research, Montreal, July 2008.
- *A topological approach to cell counting* (with Ash Pahwa), in Bio-Image Informatics Workshop, Santa Barbara, Jan 17-18, 2008.
- *Topology based method of partition, analysis, and simplification of dynamical images*, US patent application, 2006.
- *Applications of Lefschetz numbers in control theory*, SIAM Journal of Control and Optimization, **44** (2005) 5, 1677-1690.
- *Higher order Nielsen numbers*, Fixed Point Theory and Its Applications, **2005:1** (2005) 47-66.

Other activities

- *Computer Vision Primer:* web site 700 articles with over 1500 illustrations, about 1000 daily visitors.
- *Pixcavator:* image analysis software for scientists, about 25,000 downloads during 2010.