

Seminar „Efficient Algorithms for Global Optimisation Problems in Computer Vision“

(Organizers: Andres Bruhn, Thomas Pock, Xue-Cheng Tai)

Monday

Opening		
09:15-10:00	Organizers (Andres Bruhn)	Opening / 2Minute self-presentations
10:00-10:30	COFFEE BREAK	
	Session 1: Discrete Optimisation I	Chair: Egil Bae
10:30-11:00	Vladimir Kolmogorov	„Maxflow-based inference for functions with high-order terms“
11:00-11:30	Yuri Boykov	„Multi-label segmentation with constraints on geometry and complexity“
11:30-12:00	Olga Veksler	„Optimization for pixel labeling problems with structured layout“
12:00-14:00	LUNCH	
	Session 2: Continuous Optimisation I	Chair: Stamatis Lefkimmiatis
14:00-14:30	Evgeny Strelakovsky	„Generalized ordering constraints for multilabel optimization“
14:30-15:00	Xavier Bresson	„Completely convex formulation of the Chan-Vese image segmentation model“
15:00-15:30	Cecile Louchet	„Total variation denoising using posterior expectation“
15:30-16:00	COFFEE BREAK	
	Session 3: Mathematical Analysis I	Chair: Sven Grewenig
16:00-16:30	Jan Lellmann	„Optimality bounds and optimization for image partitioning“
16:30-17:00	Kristian Bredies	„Total generalized variation: A convex model for piecewise smooth images“
17:00-17:30	Michael Hintermueller	„Nonconvex TVq-models in image restoration“
17:30-18:00	Wotao Yin	„Optimization on spheres and Stiefel manifolds, with applications on genus-0 surfaces“
18:00-20:00	DINNER	

Tuesday

	Session 4: GPU Algorithms	Chair: Harald Köstler
09:00-09:30	Andreas Wedel	„3D motion analysis with stereo cameras“
09:30-10:00	Arjan Kuijper	„Volumetric nonlinear anisotropic diffusion on GPUs“
10:00-10:30	COFFEE BREAK	
	Session 5: Parallelization	Chair: Andreas Wedel
10:30-11:00	Ulrich Rüde	„Massively parallel multigrid for image processing“
11:00-11:30	Harald Köstler	„Efficient imaging algorithms on many-core platforms“
11:30-12:00	Robert Strzodka	„Parallel preconditioners for GPU-multigrid solvers“
12:00-14:00	LUNCH	
	Working Groups	
14:00-14:30	Organizers (Xue-Cheng Tai)	Working Group Definition
14:30-15:30		Working Group Meeting
15:30-16:00	COFFEE BREAK	
	Session 6: Continuous Optimisation II	Chair: Kristian Bredies
16:00-16:30	Christian Clason	„Variational methods for image reconstruction in magnetic resonance imaging“
16:30-17:00	Stacey Levine	„A variational approach for the fusion of exposure bracketed images“
17:00-17:30	Tanja Teuber	„Nonlocal filters for removing multiplicative noise“
17:30-18:00	Haomin Zhou	„A fast algorithm for finding the shortest path by solving initial value ODEs“
18:00-20:00	DINNER	

Wednesday

	Session 7: Geometric Optimisation	Chair: Guy Rosman
09:00-09:30	Daniel Cremers	„Geometrically consistent elastic matching of 3D shapes: a linear programming solution“
09:30-10:00	Ron Kimmel	„Metric geometry in action“
10:00-10:30	COFFEE BREAK	
	Session 8: Continuous Optimisation III	Chair: Evgeny Strelakovsky
10:30-11:00	Thomas Brox	„Efficient video analysis tools towards large scale unsupervised learning“
11:00-11:30	Manuel Werlberger	t.b.a
11:30-12:00	Jan Modersitzki	„Hyperelasticity in correspondence problems“
12:00-14:00	LUNCH	
14:00-18:00	TRIP TO TRIER	
18:00-20:00	DINNER	

Thursday

	Session 9: Discrete Optimisation II	Chair: Manuel Werleberger
09:00-09:30	Wenbing Tao	„Image segmentation by iteratively optimization of multiphase multiple piecewise ...“
09:30-10:00	Christoph Lampert	„Enforcing topological constraints in random field image segmentation“
10:00-10:30	COFFEE BREAK	
	Session 10: Continuous Optimisation IV	Chair: Cecile Louchet
10:30-11:00	Raymond Chan	„A variational approach for exact histogram specification“
11:00-11:30	Sung Ha Kang	„Videos stabilization of atmospheric turbulence distortion“
11:30-12:00	Egil Bae	„Simultaneous convex optimization of regions and region parameters in image ...“
12:00-14:00	LUNCH	
	Working Groups	
14:00-15:30		Working Group Meeting
15:30-16:00	COFFEE BREAK	
	Session 11: Mathematical Analysis II	Chair: Jan Lellmann
16:00-16:30	Stamatis Lefkimmiatis	„Image restoration under Hessian-based norm regularization“
16:30-17:00	Sven Grewenig	„Are extrapolation methods useful for diffusion-based image analysis?“
17:00-17:30	Antonin Chambolle	„Curvature and motion for a nonlocal perimeter“
17:30-18:00	Gabriele Steidl	„Quadrature rules, discrepancies and variational dithering“
18:00-20:00	DINNER	

Friday

	Session 12: Continous Optimisation V	Chair: Tanja Teuber
09:00-09:30	Bastian Goldlücke	„Convex relaxations for vectorial multilabel problems and the total curvature“
09:30-10:00	Joachim Weickert	„Discrete theory and numerical analysis of anisotropic diffusion interpolation“
10:00-10:30	COFFEE BREAK	
	Working Groups	
10:30-11:30		Working Group Meeting
	Closing	
11:30-12:00	Organizers (Thomas Pock)	Working Group Get Together and Summary of each Group
12:00-14:00	LUNCH	