

RAMI BEN-ARI

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Home Page: <http://www.math.tau.ac.il/research/rami.ben-ari/>

RESEARCH		Computer Vision and Image Processing
INTERESTS		3D Vision, Shape from X, Optical Flow, Segmentation, Active Contours, Anisotropic Diffusion, Visual Tracking, Machine Learning
EDUCATION	2002 - 2007	Tel-Aviv University, Tel-Aviv <i>Ph.D.</i> School of Mathematical Sciences, Dissertation: Novel Geometric and Variational Approaches for Regularization in Stereo and Optical Flow <i>Advisor:</i> Prof. Nir Sochen
	1990-1993	Technion, Israel Institute of Technology, Haifa <i>M.Sc.</i> Faculty of Aerospace Engineering <i>Thesis:</i> The influence of Non-Uniform Helicopter Blades on Vibrations and Balancing Techniques of the Rotor. <i>Advisor:</i> Prof. Aviv Rosen
	1986-1990	Technion, Israel Institute of Technology <i>B.Sc.</i> Faculty of Aerospace Engineering, cum laude
ACADEMIC APPOINTMENTS	4.09 – 11.09	Research Associate, Dept. of Computer Science, Ben-Gurion University, Israel
	3.09-9.09	Research Associate, Civil and Environmental Engineering, Technion, Israel
	2002-2007	Research Assistant, School of Mathematical Sciences, Tel-Aviv University, Israel
	1990-1993	Research Assistant, Department of Aerospace Engineering, Technion, Israel
HONORS & AWARDS	2007	The Award of Excellence in Teaching from the Faculty of Engineering, Tel-Aviv University
	2006	The Award of Excellence in Teaching from the School of Mathematical Sciences, Tel-Aviv University
	1992	Wolf Foundation Award for academic excellence
	1991	The Award of Excellence in Teaching
	1990	Technion President Excellence Award for undergraduate students
	1989	Dean Excellence Award for undergraduate students
	1988	Dean Excellence Award for undergraduate students

WORK EXPERIENCE	9.09 - Present	Orbotech Ltd - Algorithm Researcher and Orbotech Expert
	2007-2008	Orbotech Ltd. – Algorithm Researcher
	2002-2007	Tel-Aviv University - Israel <ul style="list-style-type: none"> • Establishment of Mathematical Visual Perception (MVP) lab in the Dept. of Applied Mathematics. • Head of the MVP lab
RESEARCH EXPERIENCE	3.09-Present	Technion, Haifa - Faculty of Civil and Environmental Engineering Optimization of Transportation Systems
	2002-2007	School of Mathematical Sciences, Tel-Aviv University Developing algorithms for stereo vision and optical flow problems employing the variational approach and PDEs.
	1999-2000	Faculty of Aerospace Engineering, the Technion Development of a simulation program for helicopter rotor with non-uniform blades.
REVIEWING ACTIVITY		IEEE Trans. on Pattern Analysis and Machine Intelligence, IEEE Trans. on Systems, Man and Cybernetics, Pattern Recognition Letters, ACCV
TEACHING EXPERIENCE	3.09-8.09	School of Economics, Tel-Aviv University <ul style="list-style-type: none"> • Calculus for Economists
	2004-2007	Faculty of Engineering, Tel-Aviv University <ul style="list-style-type: none"> • Integral and Differential Techniques course • Calculus course <p>Received the award of excellence in teaching (2007)</p>
	2002-2007	School of Mathematical Sciences, Tel-Aviv University Supervisor of several projects in the Vision and Robotics Workshop. see: http://www.math.tau.ac.il/~mvplab/
	1999-2000	Faculty of Aerospace Engineering, the Technion Supervision of undergraduate students in their final project regarding simulation and aerodynamic design of an experimental ramjet missile
	1990-1993	Faculty of Aerospace Engineering, the Technion
	1995-1996	Dynamics Received the award of excellence in teaching (1991)

PROGRAMMING MATLAB, C/C++, CUDA (GPU computing)

SKILLS

PUBLICATIONS **Journal Articles:**

- [J1] R. Ben-Ari & N. Sochen, "Stereo Matching with Mumford-Shah Regularization and Occlusion Handling", *IEEE Transactions in Pattern Analysis and Machine Intelligence*, 32(11), pp. 2071-2084, 2010. **Editor's selection for spotlight paper on the TPAMI Nov. 2010 Edition.**
- [J2] R. Ben-Ari & N. Sochen, "A Geometric Framework and a New Criterion in Optical Flow Modeling", *Journal of Mathematical Imaging and Vision*, Vol. 33(2), pp. 178-194, 2009
- [J3] R. Ben-Ari & N. Sochen, "A Geometric Framework for Regularization of the Data Term in Stereo Vision", *Journal of Mathematical Imaging and Vision*, Vol. 31(1), pp. 17-33, May 2008
- [J4] R. Ben-Ari & A. Rosen, "A Mathematical Modeling of Helicopter Track and Balance – Results", *Journal of Sound and Vibration*, Vol. 200(5), pp. 605-620, 1997
- [J5] A. Rosen & R. Ben-Ari, "A Mathematical Modeling of Helicopter Track and Balance – Theory", *Journal of Sound and Vibration*, Vol. 200(5), pp. 589-603, 1997

Conference Proceedings:

- [C1] R. Ben-Ari and G. Raveh, "Variational Depth from Defocus in Real-Time", Workshop on GPU in Computer Vision Applications – ICCV 2011, Accepted.
- [C2] S. Cohen and R. Ben-Ari, "Image Denoising by Bayesian Regression", ICIAP 2011, Accepted.
- [C3] R. Ben-Ari & D. Aiger, "Geodesic Active Contours with Combined Shape and Appearance Priors", *In Advanced Concepts in Intelligent Vision Systems (ACIVS) Conference*, Vol. 5259 of LNCS, pp. 494-505, 2008 (Oral Presentation, Acceptance rate: 18%).
- [C4] R. Ben-Ari & N. Sochen, "Variational Stereo Vision with Sharp Discontinuities and Occlusion Handling", *In Proc. ICCV*, pp. 1-7, 2007
- [C5] R. Ben-Ari & N. Sochen, "A General Framework and New Alignment Criterion for Dense Optical Flow", *In Proc. CVPR*, Vol. 1, pp. 529-536, 2006
- [C6] R. Ben-Ari & N. Sochen, "Non-Isotropic Regularization of the Correspondence Space in Stereo Vision", *In Proc. ICPR*, Vol. 4, pp. 293-296, 2004
- [C7] R. Ben-Ari & A. Rosen, "Investigation of Helicopter Rotor Track and Balance", *In Proc. of 37th Israel Annual Conference on Aerospace Sciences*, pp. 308-319, 1997

