Jonas Wulff

PhD Student

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Personal

Born: October 19, 1984.

Citizenship: German.

Education

since 2011	Graduate Student in Computer Science, MPI for Intelligent Systems / Tübingen University. Expected graduation: November 2017.
2005 – 2011	Diploma (Dipl-Ing.) in Computer Engineering, RWTH Aachen University Final grade: 1.4 (German system, 1.0 = best, 4.0 = worst).

Research Experience

since November 2011	Graduate Student, *Max Planck Institute for Intelligent Systems / Tübingen University* **Topic:** Model-based dense motion estimation. Supervisors: Michael Black, Hendrik Lensch
May 2014 – August 2014	Internship, *Adobe Research, Seattle.* **Project:** Combining optical flow with nearest neighbor fields for slow motion. Supervisors: Eli Shechtman, Hailin Jin, Scott Cohen
October 2010 – August 2011	Diploma Thesis, *RWTH Aachen University / Massachusetts Institute of Technology.* **Title:** Development of a biomimetic eye-tracking device for large–distance applications Supervisors: Pawan Sinha (MIT), Til Aach (RWTH)
April 2010 – September 2010	Internship, *Diehl BGT Defence.* **Project:** Texture–based surface classification for an autonomous ground vehicle.
October 2009 – February 2010	Research thesis, *University of Canterbury, Christchurch, New Zealand.* **Title:** Three-dimensional reconstruction from non-rigid motion information. Supervisors: Thomas Lotz, J. Geoffrey Chase
May 2007 – September 2009	Research student, *Institute for Image Processing, RWTH Aachen University.* **Project:** Medical image post-processing under realtime constraints. Supervisor: Thomas Stehle, Til Aach

August 2006 – October 2006	Research student, *Massachusetts Institute of Technology.* **Project:** Obtaining static Gestalt laws from dynamic experience. Supervisor: Pawan Sinha
May 2006 – May 2007	Research student, *Institute for Man-Machine Interaction, RWTH Aachen University.* **Project:** File conversion between the Blender modeling software and the COSIMIR/VEROSIM robotics simulation system. Supervisor: Christian Schlette

Services & Activities

since 2012	Regular reviewer for ECCV, CVPR, ICCV, TPAMI, IJCV, SIGGRAPH Asia. *Outstanding reviewer awards: ICCV 2015, ECCV 2016.*
2008 – 2010	Active member of the "bonding studenteninitiative e.V." student initiative, specialized on organization of career fairs. Project management "bonding BerufsBilder 2009".
2006	Contributions to the Open Source video editing software Cinelerra.
2004 – 2006	Technical leadership (writing, filming, editing) in two amateur movie projects with teams of about 30 people.
September 2004 – June 2005	Civil service, *YMCA Duisburg.* **Field of work:** Organization and supervision of youth groups for underprivileged children and adolescents; office work.

Skills

Languages	German (native), English (fluent).
Programming	Python, C/C++, Matlab.
Operating Systems	Linux (primary OS), Apple OS X, Microsoft Windows.
Graphics	Experienced in the use and scripting of Blender. Video editing and graphic design using open source and Adobe tools.

Publications

Conference Proceedings

J. Wulff, L. Sevilla-Lara, and M. J. Black. Optical flow in mostly rigid scenes. In *IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, July 2017

J. Janai, F. Güney, J. Wulff, M. Black, and A. Geiger. Slow flow: Exploiting high-speed cameras for accurate and diverse optical flow reference data. In *IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, July 2017

L. Sevilla-Lara, J. Wulff, K. Sunkavalli, and E. Shechtman. Smooth loops from unconstrained video. In *Computer Graphics Forum (Proceedings of EGSR)*, 2015

J. Wulff and M. J. Black. Efficient sparse-to-dense optical flow estimation using a learned basis and layers. In *IEEE Conf. on Computer Vision and Pattern Recognition (CVPR) 2015*, June 2015

J. Wulff and M. J. Black. Modeling blurred video with layers. In *Computer Vision – ECCV 2014*, 2014

D. Sun, J. Wulff, E. Sudderth, H.-P. Pfister, and M. Black. A fully-connected layered model of foreground and background flow. In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2013

D. J. Butler, J. Wulff, G. B. Stanley, and M. J. Black. A naturalistic open source movie for optical flow evaluation. In *European Conference on Computer Vision (ECCV)*, 2012

J. Wulff, D. J. Butler, G. B. Stanley, and M. J. Black. Lessons and insights from creating a synthetic optical flow benchmark. In *ECCV Workshop on Unsolved Problems in Optical Flow and Stereo Estimation*, 2012

J. Wulff, T. Lotz, T. Stehle, T. Aach, and J. Chase. Correspondence estimation from non-rigid motion information. In *SPIE Medical Imaging*, 2011

T. Stehle, J. Wulff, A. Behrens, S. Gross, and T. Aach. Modellbasierte Echtzeit-Bewegungsschätzung in der Fluoreszenzendoskopie. In *Bildverarbeitung für die Medizin*, 2010

S. Gross, M. Kennel, T. Stehle, J. Wulff, J. Tischendorf, C. Trautwein, and T. Aach. Polyp segmentation in NBI colonoscopy. In *Bildverarbeitung für die Medizin*, 2009

T. Stehle, J. Wulff, A. Behrens, S. Gross, and T. Aach. Denoising fluorescence endoscopy - a motion compensated temporal recursive video filter with an optimal minimum mean square error parameterization. In *IEEE International Symposium on Biomedical Imaging*, 2009

T. Stehle, M. Hennes, S. Gross, A. Behrens, J. Wulff, and T. Aach. Dynamic distortion correction for endoscopy systems with exchangeable optics. In *Bildverarbeitung für die Medizin*, 2009

T. Stehle, R. Auer, S. Gross, A. Behrens, J. Wulff, T. Aach, R. Winograd, C. Trautwein, and J. Tischendorf. Classification of colon polyps in NBI endoscopy using vascularization features. In *SPIE Medical Imaging*, 2009

Book chapters

P. Sinha, J. Wulff, and R. Held. Establishing cross-modal mappings. In D. J. Bennett and C. S. Hill, editors, *Sensory Integration and the Unity of Consciousness*. MIT Press, 2014

P. Sinha, B. Balas, Y. Ostrovsky, and J. Wulff. Visual object discovery. In S. Dickinson, A. Leonardis, B. Schiele, and M. Tarr, editors, *Object Categorization: Computer and Human Vision Perspectives*. Cambridge University Press, 2009

Published Abstracts

J. Wulff and P. Sinha. A human inspired gaze estimation system. In *Annual meeting of the Vision Sciences Society*, 2011

K. Dhandania, J. Wulff, and P. Sinha. Detecting synchrony in degraded audio-visual streams. In *Annual meeting of the Vision Sciences Society*, 2011

Y. Ostrovsky, J. Wulff, and P. Sinha. Learning static Gestalt laws through dynamic experience. In *Annual meeting of the Vision Sciences Society*, 2007