

# Vicky Froyen

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CONTACT INFORMATION	Department of Psychology Rutgers University 152 Frelinghuysen Road Piscataway, NJ 08854 USA	<i>Website:</i> <a href="http://research.vickyfroyen.com">research.vickyfroyen.com</a> <i>E-mail:</i> <a href="mailto:vicky.froyen@gmail.com">vicky.froyen@gmail.com</a>
CITIZENSHIP	Belgium	
EMPLOYEMENT HISTORY	<b>SUNY College of Optometry</b> , New York, New York USA Postdoctoral associate, Graduate Center for Vision Research, 2014 – present <b>Rutgers University</b> , New Brunswick, New Jersey USA Postdoctoral associate, Center for Cognitive Science, 2013 – 2014	
EDUCATION	<b>Rutgers University</b> , New Brunswick, New Jersey USA Ph.D., Psychology, November 2013 <ul style="list-style-type: none"><li>• Advisor: Professor Jacob Feldman, Ph.D. and Professor Manish Singh, Ph.D.</li><li>• Dissertation Title: <i>Bayesian estimation of mixture models for perceptual grouping</i></li><li>• Area of Study: Visual Perception</li></ul> <b>K.U.Leuven</b> , Leuven, Belgium M.S./M.A., Experimental Psychology, September 2010 <ul style="list-style-type: none"><li>• Thesis Title: <i>Rhythmic timing and movement trajectories in musical expertise</i></li><li>• Advisor: Professor Ralf Krampe, Ph.D.</li></ul> B.A., Psychology, July 2008 <ul style="list-style-type: none"><li>• Research Assistant to Naoki Kogo, Ph.D.</li><li>• Supervisor: Professor Johan Wagemans, Ph.D.</li></ul>	
JOURNAL PUBLICATIONS	<b>Froyen, V.</b> , Singh, M., & Feldman, J. (2013). Rotating columns: relating structure-from-motion, accretion/deletion, and figure/ground. <i>Journal of Vision</i> , 13(10), 1-12. <b>Froyen, V.</b> , Singh, M., & Feldman, J. (submitted). Bayesian estimation of the number of perceptual clusters. Manuscript submitted for review. <b>Froyen, V.</b> , O. D., Singh, M., & Feldman, J. (submitted). Bayesian Hierarchical Grouping: perceptual grouping as mixture estimation. Manuscript in preparation. <b>Froyen, V.</b> , Tanrikulu, O. D., Singh, M., & Feldman, J. (in preparation). Stereoslant: A novel method for measuring figure-ground assignment. Manuscript in preparation.	
CONFERENCE PROCEEDINGS	El-Gaaly, T., <b>Froyen, V.</b> , Elgammal, A., Feldman, J., & Singh, M. (2015). A Bayesian approach to perceptual 3D object-part decomposition using skeleton-based representations. AAAI-15. <b>Froyen, V.</b> , Feldman, J., & Singh M. (2010). A Bayesian framework for figure-ground interpretation. In <i>Advances in Neural Information Processing Systems 23</i> , J. Lafferty, C. K. I. Williams, J. Shawe-Taylor, R. Zemel, and A. Culotta, Eds., pp. 631639.	

BOOK  
CHAPTERS

Feldman, J., Singh, M. & **Froyen, V.** (2014). Bayesian Perceptual Grouping. Invited manuscript for: Handbook of Computational Perceptual Organization. S. Gepshtein and L. T. Maloney (Eds.). Oxford University Press.

Feldman, J., Singh, M., Briscoe, E., **Froyen, V.**, Kim, S. & Wilder, J. (2013). An integrated Bayesian approach to shape representation and perceptual organization. In: Shape Perception in Human and Computer Vision: An Interdisciplinary Perspective. S. Dickinson & Z. Pizlo (Eds.). Springer Verlag.

Singh, M., Feldman, J. & **Froyen, V.** (in preparation). Unifying parts and skeletons: a Bayesian approach to part decomposition. Invited manuscript for: Handbook of Computational Perceptual Organization. S. Gepshtein and L. T. Maloney (Eds.). Oxford University Press.

INVITED TALKS

Bayesian hierarchical grouping: perceptual grouping as mixture estimation. New York University, New York, USA. 2014.

3D object-part decomposition as Bayesian mixture estimation. University of Toronto, Toronto, Canada, 2014.

CONFERENCE  
PRESENTATIONS  
AND ABSTRACTS

Tanrikulu, O. D., **Froyen, V.**, Ma, L., Singh, M., & Feldman, J. (2014). A cue combination study of depth ordering from accretion-deletion and contour convexity. European Conference on Visual Perception (ECVP), August 2014.

**Froyen, V.**, Feldman, J., & Singh, M. (2014). Bayesian Hierarchical Grouping in perceptual organization. European Conference on Visual Perception (ECVP), August 2014. - oral presentation.

**Froyen, V.** (2014). Bayesian Hierarchical Grouping: A probabilistic approach to skeleton-based representation of shape. Invited Symposium: "Symmetry: theory and applications", Annual Meeting of the Society for Mathematical Psychology (MathPsych), July 2014 - oral presentation.

Kogo, N., & **Froyen, V.** (2014). Border-ownership computation reflecting consistency of surface properties. Annual Meeting of the Vision Sciences Society (VSS), May 2014

Tanrikulu, O. D., **Froyen, V.**, Ma, L., Singh, M., & Feldman, J. (2014). Combination of contour convexity and accretion/deletion in the perception of relative depth. Annual Meeting of the Vision Sciences Society (VSS), May 2014.

**Froyen, V.**, Singh, M., & Feldman, J. (2014). Bayesian Hierarchical Grouping: perceptual grouping as mixture estimation. Annual Meeting of the Vision Sciences Society (VSS), May 2014 - oral presentation.

**Froyen, V.**, Feldman, J., & Singh, M. (2014). Bayesian Hierarchical Grouping: a framework for perceptual grouping. MODVIS, May 2014 - oral presentation.

Kogo, N., & **Froyen, V.** (2014). Computation of border-ownership reflecting consistency of surface properties. MODVIS, May 2014.

**Froyen, V.**, Feldman, J., & Singh, M. (2013). A Bayesian mixture model framework for understanding perceptual grouping. Configural Processing Consortium (CPC), November 2013 - oral presentation.

Kogo, N., **Froyen, V.**, & Wagemans, J.(2013).A new model for border-ownership computation reflecting global configuration and consistency of surface properties. European Conference on Visual Perception (ECVP), August 2013

- Froyen, V.**, Feldman, J., & Singh, M. (2013). Perceptual grouping as Bayesian estimation of mixture models. European Conference on Visual Perception (ECVP), August 2013.
- Kogo, N., **Froyen, V.**, Lovik, A., & Wagemans, J. (2013). Representations of shape in modal and amodal completion conditions tested with shape frequency adaptation. Annual Meeting of the Vision Sciences Society (VSS), May 2013.
- Tanrikulu, O. D., **Froyen, V.**, Singh, M., & Feldman, J. (2013). Geometric figure-ground cues override standard depth from accretion-deletion. Annual Meeting of the Vision Sciences Society (VSS), May 2013.
- Froyen, V.**, Singh, M., & Feldman, J. (2013). Anomalous 3D structure-from-motion arises from accretion-deletion and figure-ground cues. Annual Meeting of the Vision Sciences Society (VSS), May 2013.
- Froyen, V.**, Feldman, J., & Singh, M. (2013). Perceptual grouping as Bayesian estimation of mixture models. Computational and Mathematical Models in Vision (MODVIS), May 2013.
- Froyen, V.**, Feldman, J., & Singh, M. (2012). Anomalous Structure-from-Motion from figure-ground. European Conference on Visual Perception (ECVP), August 2012.
- Froyen, V.**, Tanrikulu, O. D., Singh, M., & Feldman, J. (2012). Stereo-slant: a novel method for measuring figure-ground assignment. Annual Meeting of the Vision Sciences Society (VSS), May 2012.
- Froyen, V.**, Kogo, N., Feldman, J., Singh, M., & Wagemans, J. (2011). Integration of contour and skeleton based cues in the reconstruction of surface structure. European Conference on Visual Perception (ECVP), August 2011.
- Feldman, J., Singh, M., **Froyen, V.**, Kim, S., & Kim, S. (2011). Integrated Bayesian estimation of 3D shape and figure-ground. Annual Meeting of the Vision Sciences Society (VSS), May 2011.
- Froyen, V.**, Feldman, J., & Singh, M. (2011). Exploring figure-ground assignment using a local method. Annual Meeting of the Vision Sciences Society (VSS), May 2011.
- Kogo, N., **Froyen, V.**, Feldman, J., Singh, M., & Wagemans, J. (2011). Integration of local and global cues to reconstruct surface structure. Annual Meeting of the Vision Sciences Society (VSS), May 2011.
- Froyen, V.**, Feldman, J., & Singh, M. (2010). Local propagation of border-ownership. Annual Meeting of the Vision Sciences Society (VSS), May 2010.
- Kogo, N., **Froyen, V.**, & Wagemans, J. (2008). Interaction of occlusion cues with stereo disparities. European Conference on Visual Perception (ECVP), August 2008.

AWARDS  
& HONORS

Fulbright

- Fulbright Honorary Grant, 2010-2011

Other

- Neural Information Processing Systems 2010 Travel Award

ADVISING

Undergraduates supervised during Research Experiences for Undergraduates (REU)

- Emily Ho, Summer 2011
- Gretchen Schwab, Summer 2012

Other undergraduates supervised

- Lorilei Alley, Fall 2012 - Spring 2013