

Curriculum Vitae
JACOB FELDMAN

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Current Position

Professor, Dept. of Psychology, Center for Cognitive Science, Rutgers University, 2007-
(also Member, Graduate Faculty in Computer Science, Rutgers University)

Previous Positions

Associate Professor, Dept. of Psychology, Center for Cognitive Science, Rutgers University, 2001-2007.
Assistant Professor, Dept. of Psychology, Center for Cognitive Science, Rutgers University, 1995-2001.
Research Assistant Professor, Center for Cognitive Science, Rutgers University (1992-1995)

Education

Massachusetts Institute of Technology, Ph.D. in Cognitive Science, September 1992
Thesis: Perceptual Categories and World Regularities
Advisor: Prof. Whitman Richards
Massachusetts Institute of Technology, M.S. in Brain & Cognitive Sciences, September 1990
Thesis: Perceptual Decomposition as Inference
Advisor: Prof. Steven Pinker
Harvard College, A.B Magna cum Laude in Psychology & Social Relations, June 1986
Thesis: The Representation of Motor Programs
Advisor: Prof. Stephen Kosslyn

Research Interests

Visual perception and concept learning, focusing on the development of mathematical and computational models of human perceptual and cognitive functions. Principal areas of interest include perceptual organization and grouping; representation and categorization of shape; mathematical models of concept learning; and theoretical foundations of perception and cognition.

Awards

Rutgers Board of Trustees Award for Excellence in Research, 2014
Troland Research Award, National Academy of Sciences, 2005
George Miller award for best article in general psychology, American Psychological Association, Division 1, 2002 (for "Minimization of Boolean complexity in human concept learning" *Nature*, 407, 630-633, 2000)
National Science Foundation "CAREER" award, 1999
National Science Foundation Graduate Fellow in Psychology, 1987-1990
Harvard College Scholar, 1983-1986

Professional Activities

Associate Editor, *Cognition* (journal), 2016-.

Member, Program Committee, Cognitive Science Society Conference, 2006 – 2008.

Ad Hoc Member, Cognition and Perception Study Section, N.I.H., 2006, 2008.

Member, Program Committee, CVPR (I.E.E.E. Conference on Computer Vision and Pattern Recognition), 2004–2008.

Member, Program Committee, Second Workshop on Perceptual Organization in Computer Vision, Sept. 1999.

Member, Program Committee, I.E.E.E. Workshop on Perceptual Organization in Computer Vision, June, 1998.

Member, Psychonomic Society

Member, Vision Sciences Society

Member, Program Committee, First International Workshop on Semiotic Analysis and Design of Intelligent Systems, March, 1997.

Chair, Appeals Committee, Dept. of Psychology, Rutgers University

Member, Appointments and Promotions committee, School of Arts and Sciences, Rutgers University

Member, Graduate Faculty in Psychology, Rutgers University

Member, Editorial Board, Rutgers University Center for Cognitive Science Technical Report Series

Reviewer. **Granting agencies:** National Institutes of Health (Cognition and Perception Study Section), National Science Foundation, Air Force Office of Sponsored Research, Alzheimer's Association.

Journals: *Cognition*, *Cognitive Science*, *Perception*, *Perception & Psychophysics*, *Proceedings of the National Academy of Sciences*, *Psychological Review*, *Vision Research*, *Computer Vision and Image Understanding*, *I.E.E.E. Pattern Analysis and Machine Intelligence*. **Conferences:** I.E.E.E. Conference on Computer Vision and Pattern Recognition, Neural Information Processing Systems; etc.

Grants

NSF 1218872 “Detecting abnormalities in images”, \$339,962, 2013–2016. Role: Co-Principal Investigator (PI: Ahmed Elgammal).

NIH (NEI) R01 021494, “An integrated probabilistic framework for shape and surface interpretation” (joint with Manish Singh), \$1,072,963/4 years, 2011–2015. Role: Principal Investigator.

Paul G. Allen Foundation, “Reverse-engineering spatio-temporal reasoning: experiments in Maze World” (joint with Metaxas, Stromswold, Kowler. *Pending*).

NIH (NEI) R01 EY015888, “The Formation of Visual Objects,” \$450,000 (direct costs)/3 years, 2005–2008 (extended, 2010). Role: Principal Investigator.

NSF EITM-0339062, “Minimization of Complexity in Human Concept Learning”, \$170,000/3 years, 2004–2007 (extended to 2008). Role: Principal Investigator.

“IGERT: Interdisciplinary Training in Perceptual Science,” \$2,880,406/5 years, 2006–2010 (extended, 2013). Role: Co-PI.

NSF “CAREER” award, SBR 9875175, “The Logic of Grouping and Perceptual Organization”, \$324,497/5 years, 1999–2004. Role: Principal Investigator.

Rutgers University Information Sciences Council Pilot project Award (“Vision-Equipped Agents for the Disabled”, \$30,470/1 year, 1999). Role: Co-PI.

NRSA (NIH) Training Grant (MH19975, T32, “Visual Perception and Language”, \$504,838/5 years, 1998–2003). Role: Training Associate.

Teaching

Graduate Coordinator, Cognitive Area, Dept. of Psychology, Rutgers University 2006 – .
Courses taught (all in the Dept. of Psychology, Rutgers University, except where noted):

Undergraduate:

Psychology 305 “Cognition” (designed course & computer-based labs), Spring 1994 – present
Psychology 306 “Cognition laboratory” (designed course & computer-based labs), Spring 1994 – 2009
Psychology 201 “Principles of Cognitive Science,” Fall 1997
Psychology 302 “Sensation and Perception”, Spring 1993
Guest lecturer, Cognitive Science 201 “Cognitive Science : A Multi-disciplinary Introduction”, 1998–present.
Guest lecturer, “Creativity in Science”, Dean’s seminar, 1997–2002.
Numerous undergraduate research projects (Independent Study in Psychology, Independent study in Cognitive Science), 1993–present

Graduate:

Research design and analysis (Introduction to Statistics), Fall, 2008; Fall, 2011.
Concepts and Thought (seminar on concepts and categorization), Fall, 2005.
Computational Cognition (introductory graduate level course on the theoretical and computational foundations of cognition), 2001, 2002, 2004, 2007, 2010, 2011.
Visual Cognition (seminar on higher-level vision, including shape, perceptual grouping, and perceptual organization), Fall, 1996.
Learning and Categorization (seminar on human concept learning and mental representation of categories), Spring, 1999.
Guest lecturer, *Proseminar in Cognitive Science*, Center for Cognitive Science, 1996–present.
Independent study in mathematical techniques in psychology (student: Lissa Galluccio), 1999.
Supervised Certificates in Cognitive Science (Ali Shokoufandeh, 2000; Yakov Keselman, 2002).

Supervised undergraduate honors’ theses:

Mark Balaban (1999), Dan Veksler (1999), Matthew Inverso (2012)

Supervised M.A.s:

Elan Barenholtz (2003) *Perceptual comparisons within and between object parts: evidence for a single-part superiority effect.*
David Fass (2004) *Categorization under complexity: a unified MDL account of human learning of regular and irregular categories.*
Cordelia Aitkin (2004) *Complexity and subjective difficulty of categories defined over objects with three-valued features.*
Erica Briscoe (2005) *Effects of conceptual complexity on learning strategies.*
Sung-Ho Kim (2008) *Globally inconsistent figure/ground induced by a negative part.*
John Wilder (2008) *Is human shape categorization based on natural shape statistics?*
Pete Pantelis (2009) *The Interpretation of Intentionality from Dynamic Scenes.*
Seha Kim (2011) *The influence of axiality on figure/ground assignment*

Supervised Ph.D.s:

Patrice D. Tremoulet (2000): *Inferring animacy from motion, form, and context cues*
Elan Barenholtz (2004): *What the deforming contour tells us about shape*
David Fass (2005): *Human sensitivity to mutual information*
Erica Briscoe (2008): *Shape skeletons and shape similarity*

Cordelia Aitkin (2009): *Discretization Of Continuous Features By Human Learners*
Sung-ho Kim (2011): *The effects of amodal completion and perceived causality on apparent motion*
Pete Pantelis (2013): *Using autonomous virtual agents to study the perception of intention*
John Wilder (2013): *The influence of complexity on the detection of contours*
Vicky Froyen (2013): *Bayesian mixture estimation for perceptual grouping*

Graduate students currently supervised:

Nate Destler, Serena De Stefani

Supervised undergraduate research assistants, Fall 1988-Summer 1989, Massachusetts Institute of Technology

Teaching Assistant and Laboratory Instructor, Laboratory Methods and Statistics for Cognitive Science (Instructor: Steven Pinker), Spring 1989, Massachusetts Institute of Technology

Teaching Assistant, Introduction to Psychology (Instructor: Jeremy Wolfe), Fall 1987,1988, Massachusetts Institute of Technology

Research Assistant in Cognitive Psychology for Prof. Stephen Kosslyn, Fall 1983-Summer 1986, Harvard University

Talks and Presentations

Simplicity in human concept learning. Invited talk, ICML Workshop on Interpretability in Machine Learning, June 2016.

Perceptual grouping from a Bayesian point of view. Invited Colloquium, Dept. of Psychology, Yale University, February 2015.

Simplicity and likelihood in Bayesian perceptual grouping. Invited talk, Workshop on Simplicity and Likelihood in Perceptual Organization, U. K. Leuven, 2012.

Computational integration of local and global form. Invited talk, Symposium on Part-whole relationships in visual cortex, Vision Science Society, 2012.

"Explaining" a shape by estimating its generating skeleton. Invited talk, First International Workshop on Shape Perception in Human and Computer Vision, Marseille, France, October, 2008.

Towards a principled account of the mental representation of shape. Invited talk, Dept. of Cognitive Science, Johns Hopkins University, March, 2008.

Shape, structure and skeletons. Invited talk, IGERT Student Research Symposium 2007, Carnegie Mellon University, June, 2007.

Simple heads in a complex world. Invited talk, Symposium in honor of Roger Shepard, Cognitive Science Society Conference, Vancouver, July, 2006.

Skeletons in the mist: local and global influences in the representation of shape. Colloquium, Neural and Cognitive Sciences, University of Maryland, April, 2006.

Skeletons in the mist: local and global influences in the representation of shape. Colloquium, Dept. of Cognitive and Linguistic Sciences, Brown University, April, 2006.

Parts and processes: local and global mechanisms in the representation of shape. Colloquium, Dept. of Brain and Cognitive Sciences, University of Rochester, May, 2005.

Detecting simple patterns in featural data. Invited talk, IPAM workshop on Probabilistic Models of Cognition: The Mathematics of Mind. Los Angeles, January 2005.

Conceptual complexity and concept learning. Colloquium, Dept. of Cognitive and Linguistic Sciences, Brown University, Providence, RI, April, 2003.

Conceptual complexity and concept learning. Colloquium, Dept. of Brain and Cognitive Sciences, M.I.T., February, 2003.

Simplicity and complexity in human concept learning. Invited Address (2002 George Miller Award address), American Psychological Association Meeting, Chicago, August, 2002.

Origins of visual “objects” in the early computation of spatial relations. Colloquium, Dept. of Psychology, University of Pennsylvania, January, 2002.

Minimal models and MDL. Invited comments, workshop on Minimal Description Length: Developments in Theory and New Applications, NIPS, December, 2001.

Simplicity and complexity in human concept learning. Presented at the Meeting of the Psychonomic Society, New Orleans, Louisiana, November, 2000.

Bayesian contour integration. Invited talk, Workshop on Perceptual Grouping and 3-D object perception: Psychophysics and Bayesian modelling. Leuven, Belgium, October, 2000.

Formal connections between Simplicity and Likelihood principles: the spectrum from Bayes to Occam. Invited talk, Workshop on Perceptual Grouping and 3-D object perception: Psychophysics and Bayesian modelling. Leuven, Belgium, October, 2000.

Simplicity and complexity in human concept learning. Invited talk, Dept. of Psychology, UCLA, June, 2000.

Bayesian contour segmentation. Presented at the conference of the Association for Research in Vision and Ophthalmology (ARVO); Fort Lauderdale, FL, May, 1999.

Structure in mental shape spaces. Colloquium, NECI, Princeton, NJ, September, 1998.

Inference of a virtual curve from patterns of dots. Presented at the conference of the Association for Research in Vision and Ophthalmology (ARVO); Fort Lauderdale, FL, May, 1998.

The role of the “object hypothesis” in perceptual grouping. Paper presented at the *Fifth annual pre-psychonomics workshop on Object Perception and Memory (OPAM)*; Philadelphia, PA, November, 1997.

The logic of perceptual grouping. Colloquium, Dept. of Brain and Cognitive Sciences; University of Rochester, Rochester, NY, April, 1996.

Grouping as regularity-finding, NECI Vision Workshop; Princeton, NJ, March, 1995.

Qualitative object categories. Paper presented at the *Workshop on Functionality in Object Recognition*; Harper’s Ferry, WV, August, 1993.

Perceptual categories. Invited talk, Ecole des Hautes Etudes des Sciences Sociales; Paris, France, June, 1993.

Causal models of dot groupings. Paper presented at the *DIMACS Workshop on Partitioning Data Sets: With Applications to Psychology, Computer Vision, and Target Tracking*; New Brunswick, NJ, April, 1993.

Perceptual categories and Bayesian inference. Remarks given at the *Workshop on New Directions in Image Understanding: Merging Psychophysics and Computation*; Chatham MA, January, 1993.

Perceptual categories. Colloquium, Dept. of Psychology, Columbia University; New York, NY, December, 1992.

Constructing perceptual categories. Paper presented at the *I.E.E.E Conference on Computer Vision and Pattern Recognition*; Champagne-Urbana, IL, June, 1992.

Force dynamics of tempo change in music. Paper presented at the *Second International Conference on Music Perception and Cognition*; Los Angeles, CA, February, 1992.

Perceptual categories and world regularities. Colloquium, Rutgers University Center for Cognitive Science, Rutgers University; New Brunswick, NJ, February, 1992.

Constructing perceptual categories. Colloquium, Dept. of Electrical Engineering, Yale University; New Haven, CT, December, 1991.

Perceptual simplicity and modes of structural generation. Paper presented at the *Thirteenth Annual Conference of the Cognitive Science Society*; Chicago, IL, August, 1991.

Shape from rotation. Paper presented at the *Annual Meeting of the Eastern Psychological Association*; Boston, MA, April, 1989.

Publications

Journal articles

- Feldman, J. (in press) What are the “true” statistics of the environment? *Cognitive Science*.
- Feldman, J. (2016). The simplicity principle in perception and cognition. *WIREs Cognitive Science*, 7, 330–340.
- Tanrikulu, O. Daglar, Froyen, V., Feldman, J. and Singh, M. (2016) Geometric figure-ground cues override standard depth from accretion-deletion. *Journal of Vision*, 16(5).
- Denisova, K., Feldman, J., Su, X. and Singh, M. (2016). Investigating shape representation using sensitivity to part- and axis-based transformations. *Vision Research* 126, 347–361.
- Pantelis, P. C., Gerstner, T., Sanik, K., Weinstein, A., Cholewiak, S. A., Kharkwal, G., Wu, C.-C., and Feldman, J. (2016). Agency and rationality: Adopting the intentional stance toward evolved virtual agents. *Decision*, 3(1), 40–53.
- Mathy, F. and Feldman, J. (2016) Presentation order effects on category generalization. *Experimental Psychology*, 63(1), 55–69.
- Wilder, J. D., Feldman, J. and Singh, M. (2015) The role of shape complexity in the detection of closed contours. *Vision Research*, 126, 220–231.
- Froyen, V., Feldman, J. and Singh, M. (2015). Bayesian Hierarchical Grouping: perceptual grouping as mixture estimation. *Psychological Review* 122(4), 575–597.
- Feldman, J. (2015). Bayesian inference and “truth”: a comment on Hoffman, Singh, and Prakash. *Psychonomic Bulletin & Review*, 22(6), 1523–1525.
- Wilder, J. D., Feldman, J. and Singh, M. (2015). Contour complexity and contour detection. *Journal of Vision*, 15(6).
- Pantelis, P. C., Baker, C., Cholewiak, S., Sanik, K., Weinstein, A., Wu, C.-C., Tenenbaum, J. B. and Feldman, J. (2014) Inferring the intentional states of autonomous virtual agents. *Cognition*, 130, 360–379.
- Froyen, V., Feldman, J., and Singh, M. (2013) Rotating columns: relating structure-from-motion, accretion/deletion, and figure/ground. *Journal of Vision*, 13(10), 1–12.
- Kim, S.-H., Feldman, J. and Singh, M. (2013) Perceived causality can alter the perceived trajectory of apparent motion. *Psychological Science*, 24(4), 575–582.
- Feldman, J. (2013) Tuning your priors to the world. *Topics in Cognitive Science*, 5, 13–34.
- Feldman, J. (2012) Symbolic representation of probabilistic worlds. *Cognition* 123, 61–83.
- Kim, S.-H., Feldman, J. and Singh, M. (2012). Curved apparent motion induced by amodal completion. *Attention, Perception & Psychophysics*, 74(2), 350–364.
- Mathy, F. and Feldman, J. (2012) What’s magic about magic numbers? Chunking and data compression in short-term memory. *Cognition*, 122, 346–362.
- Pantelis, P. C. and Feldman, J. (2012). Exploring the mental space of autonomous intentional agents. *Attention, Perception & Psychophysics*, 74(1), 239–249.
- Singh, M. and Feldman, J. (2012) Principles of contour information: a response to Lim and Leek (2012). *Psychological Review*, 119(3), 678–683.
- Wagemans, J., Feldman, J., Gepshtein, S., Kimchi, R., Pomerantz, J., van der Helm, P. and van Leeuwen, C. (2012). A Century of Gestalt Psychology in Visual Perception II. Conceptual and Theoretical Foundations. *Psychological Bulletin*, 138(6), 1218–1252.

- Wilder, J. D., Feldman, J. and Singh, M. (2011) Superordinate shape classification using natural shape statistics. *Cognition*, 119, 325-340.
- Briscoe, E. and Feldman, J. (2011) Conceptual complexity and the bias/variance tradeoff. *Cognition*, 118, 2-16.
- Mathy, F. and Feldman, J. (2009) A rule-based presentation order facilitates category learning. *Psychonomic Bulletin & Review*, 16(6), 1050-1057.
- Feldman, J. (2009) Bayes and the simplicity principle in perception. *Psychological Review*, 116(4), 875-887.
- Harrison, S. and Feldman, J. (2009) The influence of shape and skeletal axis structure on texture perception. *Journal of Vision*, 9(6), 1-21.
- Harrison, S. and Feldman, J. (2009) Perceptual comparison of features within and between objects: a new look. *Vision Research*, 49(23), 2790-2799.
- Kim, S. and Feldman, J. (2009) Globally inconsistent figure/ground relations induced by a negative part. *Journal of Vision*, 9(10), 1-13.
- Goodman, N. D., Tenenbaum, J. B., Feldman, J. and Griffiths, T. L. (2008). A rational analysis of rule-based concept learning. *Cognitive Science*, 32(1), 108-154.
- Feldman, J. (2007) The formation of visual "objects" in the early computation of spatial relations. *Perception & Psychophysics*, 69(5), 816-827.
- Feldman, J. and Singh, M. (2006) Bayesian estimation of the shape skeleton. *Proceedings of the National Academy of Sciences* 103(47), 18014-18019.
- Tremoulet, P. D. and Feldman, J. (2006) The influence of spatial context and the role of intentionality in the interpretation of animacy from motion. *Perception & Psychophysics*, 68(6), 1047-1058.
- Barenholtz, E. and Feldman, J. (2006) Determination of visual figure and ground in dynamically deforming shapes. *Cognition*, 101(3), 530-544.
- Feldman, J. (2006) An algebra of human concept learning. *Journal of Mathematical Psychology*, 50, 339-368.
- Feldman, J. and Tremoulet, P. D. (2006) Individuation of visual objects over time. *Cognition*, 99, 131-165.
- Cohen, E. H., Barenholtz, E., Singh, M. and Feldman, J. (2005) What change detection tells us about the visual representation of shape. *Journal of Vision* 5(4), 313-321.
- Feldman, J. and Singh, M. (2005) Information along contours and object boundaries. *Psychological Review*, 112(1), 243-252.
- Feldman, J. (2004) How surprising is a simple pattern? Quantifying "Eureka!" *Cognition*, 93, 199-224.
- Feldman, J. (2003) The simplicity principle in human concept learning. *Current Directions in Psychological Science*, 12(6), 227-232.
- Barenholtz, E., Cohen, E., Feldman, J. and Singh, M. (2003). Detection of change in shape: an advantage for concavities. *Cognition*, 89(1), 1-9.
- Feldman, J. (2003) Perceptual grouping by selection of a logically minimal model. *International Journal of Computer Vision*, 55(1), 5-25.
- Feldman, J. (2003) What is a visual object? *Trends in Cognitive Science*, 7(6), 252-256.
- Feldman, J. (2003) A catalog of Boolean concepts. *Journal of Mathematical Psychology*, 47(1), 98-112.
- Barenholtz, E. and Feldman, J. (2003) Perceptual comparisons within and between object parts: evidence for a single-part superiority effect. *Vision Research*, 43(15), 1655-1666.
- Feldman, J. (2001). Bayesian contour integration. *Perception & Psychophysics*, 63(7) 1171-1182.
- Scholl, B., Pylyshyn, Z. and Feldman, J. (2001) What is a visual object? Evidence from target merging in multiple object tracking. *Cognition*, 80(1-2), 159-177.

- Feldman, J. (2000) Minimization of Boolean complexity in human concept learning. *Nature*, 407, 630-633.
- Tremoulet, P. and Feldman, J. (2000) Perception of animacy from the motion of a single object. *Perception*, 29, 943-951.
- Vishwanath, D., Kowler, E., and Feldman, J. (2000) Saccadic localization of occluded targets. *Vision Research*, 40, 2797-2811.
- Feldman, J. (2000) Bias toward regular form in mental shape spaces. *Journal of Experimental Psychology: Human Perception and Performance*, 26(1), 1-14.
- Feldman, J. (1999) The role of objects in perceptual grouping. *Acta Psychologica*, 102, 137-163.
- Feldman, J. & Richards, W. A. (1998) Mapping the mental space of rectangles. *Perception*, 27, 1191-1202.
- Feldman, J. (1997) Curvilinearity, covariance, and regularity in perceptual groups. *Vision Research*, 37(20), 2835-2848.
- Feldman, J. (1997) Regularity-based perceptual grouping. *Computational Intelligence*, 13(4), 582-623.
- Feldman, J. (1997) The structure of perceptual categories. *Journal of Mathematical Psychology*, 41, 145-170.
- Feldman, J. (1996) Regularity vs. genericity in the perception of collinearity. *Perception*, 25, 335-342.
- Feldman, J., Epstein, D., & Richards, W. (1992) Force dynamics of tempo change in music. *Music Perception* 10(2), 185-204.

Chapters and conference proceedings

- Saleh, B., Elgammal, A., Feldman, J. (in press) The role of typicality in object classification: improving the generalization capacity of convolutional neural networks. International Joint Conference on Artificial Intelligence (IJCAI-16).
- Saleh, B., Elgammal, A., Feldman, J. and Farhadi, A. (2016) Toward a taxonomy and computational models Of abnormalities in images. *AAAI-16. Outstanding student paper, AAAI-16*.
- El-Gaaly, T., Froyen, V., Elgammal, A., Feldman, J. and Singh, M. (in press) A Bayesian approach to perceptual 3D object-part decomposition using skeleton-based representations. *AAAI 2015*.
- Feldman, J., Singh, M. and Froyen, V. (2014) Perceptual grouping as Bayesian mixture estimation. In the *Oxford Handbook of Computational Perceptual Organization* (S. Gepshtein, L. Maloney, and M. Singh, eds.), Oxford University Press.
- Feldman, J. (2015) Probabilistic models of perceptual features. In *Handbook of Perceptual Organization*, (J. Wagemans, ed.), 933-947. Oxford: Oxford University Press.
- Feldman, J. (2015) Bayesian models of perceptual organization. In *Handbook of Perceptual Organization* (J. Wagemans, ed.), 1008-1026. Oxford: Oxford University Press.
- Feldman, J., Singh, M., Briscoe, E., Froyen, V., Kim, S., and Wilder, J. D. (2013). An integrated Bayesian approach to shape representation and perceptual organization. In *Shape Perception in Human and Computer Vision: An Interdisciplinary Perspective* (S. Dickinson and Z. Pizlo, eds.) Springer.
- Pantelis, P. C., Cholewiak, S. A., Ringstad, P., Sanik, K., Weinstein, A., Wu, C.-C. and Feldman, J. Perception of intentions and mental states in autonomous virtual agents. Pantelis, P. C. and Feldman, J. (2011) Exploring the mental space of autonomous intentional agents. *Proceedings of the Cognitive Science Society*.
- Kim, S.-H., Feldman, J. and Singh, M. (2010). Launching curved apparent motion: a motion interpolation study. *Proceedings of the 2010 conference on Object Perception, Attention, and Memory*. Published *Visual Cognition*, 18(10), 1514-1518.

- Froyen, V., Feldman, J. and Singh, M. (2010) A Bayesian framework for figure-ground interpretation. In Lafferty, Williams, Shawe-Taylor, Zemel, and Culotta (eds.) *Advances in Neural Information Processing Systems* 23.
- Pantelis, P. C. and Feldman, J. (2010) Exploring the mental space of autonomous intentional agents. *Proceedings of the Cognitive Science Society*.
- Goodman, N. D., Tenenbaum, J. B., Griffiths, T. L., and Feldman, J. (2007) Compositionality in Rational Analysis: Grammar-based Induction for Concept Learning. In *The Probabilistic Mind: Prospects for Bayesian Cognitive Science* (M. Oaksford and N. Chater, eds.)
- Goodman, N. D., Griffiths, T. L., A and Feldman, J., and Tenenbaum, J. B. (2007) A rational analysis of rule-based concept learning. *Proceedings of the Cognitive Science Society*.
- Briscoe, E. and Feldman, J. (2006) Conceptual complexity and the bias-variance tradeoff. In *Proceedings of the 28th Annual Conference of the Cognitive Science Society* (pp. 1038-1043). Mahwah, NJ: Erlbaum.
- Aitkin, C. D. and Feldman, J. (2006) Subjective complexity of categories defined over three-valued features. In Sun R., Miyake N., Schunn C. (Eds.), *Proceedings of the 28th Annual Conference of the Cognitive Science Society* (pp. 961-966). Mahwah, NJ: Erlbaum.
- Fass, D. and Feldman, J. (2002) Categorization under complexity: a unified MDL account of human learning of regular and irregular categories. *Advances in Neural Information Processing Systems* 15, 35-42.
- Feldman, J. (1999) Does vision work? Towards a semantics of perception. In *What is Cognitive Science?*, (E. Lepore and Z. Pylyshyn, eds.) Basil Blackwell, 208-229.
- Zhang, W., Dickinson, S., Sclaroff, S., Feldman, J. and Dunn, S. (1998) Shape-based indexing in a medical image database. *Proceedings of the I.E.E.E. Workshop on Biomedical Image Analysis*, 221-230.
- Feldman, J. (1997) Efficient regularity-based grouping. *Proceedings of the I.E.E.E. Conference on Computer Vision and Pattern Recognition*, 288-294, Los Alamitos, CA: I.E.E.E. Computer Society Press.
- Richards, W. Jepson, A. & Feldman, J. (1996) Priors, preferences, and categorical percepts. In *Perception as Bayesian Inference*, (D. Knill & W. Richards, eds.) Cambridge University Press, 1996.
- Zhang, W., Dickinson, S., Sclaroff, S., Marsic, I., Hawkins, S., Feldman, J., and Dunn, S. (1996) Searching medical image databases by image content. *Proceedings of the Image and Multidimensional Digital Signal Processing Workshop*, 146-147 Belize, March, 1996.
- Feldman, J. (1995) Formal constraints on cognitive interpretations of causal structure. *Proceedings of the I.E.E.E. Workshop on Architectures for Semiotic Modeling and Situation Analysis*, Monterey, CA.
- Feldman, J. (1995) Perceptual models of small dot clusters. In *Partitioning Data Sets: DIMACS Series in Discrete Mathematics and Theoretical Computer Science*, Vol. 19, (I. Cox, P. Hansen, and B. Julesz, eds.), American Mathematical Society Press.
- Feldman, J. (1992) Constructing perceptual categories. *Proceedings of the 1992 I.E.E.E. Conference on Computer Vision and Pattern Recognition*, 244-250. Los Alamitos, CA: I.E.E.E. Computer Society Press.
- Feldman, J., Jepson, A., & Richards, W. (1992) Is perception for real? *Proceedings of the Conference on Cognition and Representation*, 240-267, S.U.N.Y. Buffalo.
- Richards, W., Feldman, J., & Jepson, A. (1992) From features to perceptual categories. *Proceedings of the British Machine Vision Conference*, 99-108, Leeds, Great Britain.
- Epstein, D. & Feldman, J. (1991) Pilot studies of acceleration/ritard. In D. Epstein, *The Sounding Stream: Studies of Time in Music*. New York: Schirmer/Macmillan.

Feldman, J. (1991). Perceptual simplicity and modes of structural generation. *Proceedings of the 13th Annual Conference of the Cognitive Science Society*, 299-304. Hillsdale, N.J.: Lawrence Erlbaum.

Conference abstracts

Froyen, V., Kogo, N., Singh, S. and Feldman, J. (2015) Modal and amodal shape completion. Proceedings of the Meeting of the Vision Sciences Society.

Green, E. J., Singh, M. and Feldman, J. (2015) Apparent motion of negative parts. Proceedings of the Meeting of the Vision Sciences Society.

He, X., Feldman, J. and Singh, M. (2015) Structure from motion without projective consistency. Proceedings of the Meeting of the Vision Sciences Society.

Kim, S., Singh, M. and Feldman, J. (2015) Estimation of 3D surface shape from line drawings: a Bayesian model. Proceedings of the Meeting of the Vision Sciences Society.

Kim, S., Feldman, J. and Singh, M. (2015) Bayesian modeling of 3D shape inference from line drawings. MODVIS 2015.

Tanrikulu, O., Froyen, V., Feldman, J. and Singh, M. (2015). Bridging the gap between standard Accretion/Deletion and Rotating Columns. Proceedings of the Meeting of the Vision Sciences Society.

Froyen, V., Singh, M., and Feldman, J. (2014) Bayesian Hierarchical Grouping: perceptual grouping as mixture estimation. Proceedings of the Meeting of the Vision Sciences Society.

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