JEAN PONCE
CURRICULUM VITAE

EDUCATION

• Doctorat d'Etat, Computer Science, University of Paris Orsay (1988).
• Doctorat de Troisième Cycle, Computer Science, University of Paris Orsay (1983).
• Ecole Normale Supérieure de l'Enseignement Technique, Mathematics (1978–1982).
• Diplôme d'Etudes Approfondies, Computer Science, University of Paris Orsay (1981).
• Maîtrise, Mathematics, University of Paris Orsay (1980).

EMPLOYMENT

• Chair, Département d'Informatique, Ecole Normale Supérieure [ENS], Paris (2011–).
• Professor, exceptional class (permanent position, "titulaire"), Département d'Informatique, ENS, Paris (2007–).
• Professor, first class (non-permanent position, "professeur associé"), Département d'Informatique, ENS, Paris (2006).
• Professor, Dept. of Computer Science and Beckman Institute, University of Illinois at Urbana-Champaign [UIUC] (1998–2006).
• Associate Professor, Dept. of Computer Science and Beckman Institute, UIUC (1993-1998).
• Assistant Professor, Dept. of Computer Science and Beckman Institute, UIUC (1990-1993).
• Sr. Research Associate, Robotics Laboratory, Dept. of Computer Science, Stanford University (1988-1989).
• Research Associate, Robotics Laboratory, Dept. of Computer Science, Stanford University (1985-1988).
• Visiting Scientist, MIT Artificial Intelligence Laboratory (1984-1985).
• Research Scientist, Institut National de Recherche en Informatique et Automatique (1982-1985).

RESEARCH INTERESTS

• Computer Vision, Computer Graphics, Machine Learning, Robotics.

HONORS AND AWARDS

• Sr. Member, Institut Universitaire de France (2012–).
• Recipient of the ERC Advanced Grant "VideoWorld" (2011).
• IEEE Fellow (2003).
• Outstanding Undergraduate Advisor award, College of Engineering, University of Illinois (2000).
• Sr. Xerox award for faculty research, College of Engineering, University of Illinois (1998).
• Beckman Associate in the Center of Advanced Study of the University of Illinois (1994-95).
• Jr. Xerox award for faculty research, College of Engineering, University of Illinois (1993).

US PATENTS

• "Match, Expand, and Filter Technique for Multi-View Stereopsis", Y. Furukawa and J. Ponce, US Patent # 8,331,615 (2012). PMVS, an implementation of this technique available under a GPL license at `http://http://www.di.ens.fr/pmvs/`, is used in the Photo Tours feature of Google Maps. It is also used in production by both Lucasfilm and Weta Digital.
• "Automated Reconfigurable Object Manipulation Device with an Array of Pins", S. Akella, S. Blind, C. Mc Cullough, and J. Ponce, US Patent # 6,633,797 (2003).

PROFESSIONAL ACTIVITIES

• Editorial Board Member, SIAM Journal on Imaging Sciences (2010–2011).
• Editor-in-Chief, International Journal of Computer Vision (2003–2008).
• Editorial Board Member, Foundation and Trends in Computer Graphics and Vision (2005–).
• Editorial Board Member, International Journal of Computer Vision (2001-2002).
• Associate Editor, IEEE Transactions on Robotics and Automation (1998-2001).
• Area Editor, Computer Vision and Image Understanding (1994-2000).

• General Chair, European Conf. on Computer Vision, Marseille, France (2008).
• General Chair, IEEE Conf. on Computer Vision and Pattern Recognition, Hilton Head Island, SC (2000).
• Program Chair, IEEE Conf. on Computer Vision and Pattern Recognition, San Juan, PR (1997).

• Chair, Third Int. Workshop on Object Recognition, Siracusa, Italy (2006).
• Chair, Second Int. Workshop on Object Recognition, Taormina, Italy (2004).
• Chair, First Int. Workshop on Object Recognition, Taormina, Italy (2003).
• Chair, DIMACS Workshop on Computer Vision and Robotics, Rutgers University (1999).
• Chair, Int. Workshop on Object Representation in Computer Vision, University of Cambridge, UK (1996).
• Chair, NSF/ARPA Workshop on Object Representation in Computer Vision, New York City, NY (1994).

• Member, contents thematic commission, Cap Digital, (2009–).
• Member, Scientific Advisory Board of the ENS Institute (2007–).
• Member, Network of North American Advisors to the French Academy of Engineering (2002–2005).
• Member, Scientific Advisory Board of France Télécom (2001-2004).
• Member, Scientific Advisory Board of Electricité de France (1998-2002).
• Member, ARO Computational Geometry for Intelligent Systems Advisory Board (1996–).
• Member, ARPA/ORD RADIUS Image Understanding Advisory Committee (1994-1996).

• Recent Invited Lectures (2010–2013)
2010: Keynote speaker, British Association for Machine Vision Conference, Aberystwyth, Wales; What Can Computer Vision Do for Neuroscience and Vice Versa Conference, Janelia Farm; Laboratoire d'informatique Gaspard-Monge, Paris; Laboratoire Jacques-Louis Lions, Paris. **2011:** Distinguished speaker, Taiwan Academica Sinica; Distinguished speaker, University of Delaware Computer Science Department; ETH Zurich Computer Science Department.
2012: Invited speaker at the ACCV Workshop on E-Heritage, Daejong, Korea.
2013: Keynote speaker for the 37th Annual Workshop of the Austrian Association for Pattern Recognition, Innsbruck, Austria; Distinguished speaker for the XRCE 20th anniversary, Grenoble, France.

ADMINISTRATIVE RESPONSABILITIES

UIUC:
• Faculty committees: faculty search, graduate admission, promotion and tenure.
• Head of the artificial intelligence group of the computer science department.
• Head of the artificial group of the Beckman Institute.

ENS:
• Head of the WILLOW project-team (2007–). WILLOW is part of DI ("Département d'Informatique

de l'ENS), the ENS computer science department, a joint unit of ENS, CNRS, and INRIA (UMR 8548). Its research focuses on computer vision. WILLOW consists of 15 researchers, including 3 permanent faculty members.
• In charge of the ENS computer science entrance exam (2007–2010).
• In charge of teaching at the ENS computer science department (2008–2011).
• In charge of the "habilitation diriger les recherches" (habilitation to direct research) degree at the ENS computer science department (2009–).
• In charge of the DI activities linked to the French "investissements d'avenir" ("investing in the future") initiative: I have been instrumental in the effort to make DI a member of the Paris Foundation of Mathematical Sciences ("Fondation de Sciences Mathématiques de Paris," or FSMP), and I have headed the computer science part of the successful FSMP Laboratory of Excellence ("LABEX") project, granted in 2011. I have also headed the computer science part of the successful Excellence Initiative ("IDEX") project of the "Paris Sciences et Lettres" Foundation, granted in 2011.
• Head of the ENS computer science department (2011–).

TEACHING

UIUC:
• CS257: Numerical Methods (sophomores).
• CS318: Introduction to Computer Graphics (seniors).
• CS319: Advanced Computer Graphics (seniors).
• CS348: Introduction to Artificial Intelligence (seniors).
• CS397: Geometric and Symbolic Computation (seniors).
• CS397: Geometric Modeling (seniors).
• ECE449/CS443: Computer Vision (graduate students).
• ECE450: Advanced Robotic Planning (graduate students).
• CS497: Geometric Methods in Computer Vision (graduate students).

ENS:
• Introduction to Scientific Computing and its Applications (M1, 45h).
• Geometric Bases of Computer Science (M1, 24h).
• Geometry and Computer Vision (M2, 45h).
• Introduction to Computer Vision (M1, 45h).
• Object Recognition (M2, 6h).

Tutorials and Summer Schools:
• Tutorial on sparce coding and machine learning for image analysis, International Conference on Computer Vision, with Francis Bach, Julien Mairal, and Guillermo Sapiro, 2010 (3 hours).
• Tutorial on sparce coding and machine learning for image analysis, IEEE Conference on Computer Vision and Pattern Recognition, with Francis Bach, Julien Mairal, and Guillermo Sapiro, 2010 (4 hours).
• ENS/INRIA Visual Recognition and Machine Learning Summer School, with Ivan Laptev, Cordelia Schmid, and Josef Sivic, 2011-2013.

STUDENT SUPERVISION

Current PhD Students:
• Louise Benoît.
• Florent Couzinie-Devy.
• Piotr Bojanowski.

• Rafael Sampaio de Rezende.

Past PhD Students:
• A. Joulin. Post-Doctoral Researcher, Stanford University.
• O. Duchenne. Engineer, Inter Korea.
• Y-Lan Boureau. Post-Doctoral Researcher, New York University.
• Oliver Whyte. Engineer, Microsoft.
• Julien Mairal. Research Scientist, INRIA.
• Yakup Genc. Siemens SCR.
• Tanuja Joshi. Microsoft.
• Yasutaka Furukawa. Assistant Professor, Dept. of Computer Science and Engineernig, Washington University in St. Louis.
• Akash Kushal. Two Sigma Investments.
• Svetlana Lazebnik. Assistant Professor, Dept. of Computer Science, University of Illinois at Urbana-Champaign.
• Kenton McHenry. National Center for Supercomputing Applications.
• Frederick Rothganger. Sandia Laboratories.
• Ilan Shimshoni. Professor, Dept. of Management Information Systems, University of Haifa, Israel.
• Attawith Sudsang. Assistant Professor, Dept. of Computer Engineering, Chulalongkom University, Thailand.
• Steven Sullivan. Senior Technology Officer, LucasFilm.

Past MS Students:
• Sébastien Blind.
• Sung-il Pae.
• Zeynep Kantarcioglu (de juré advisor).
• Valérie Lehner (de juré advisor).
• Troy Thomas.
• Sylvain Petitjean.
• Darrell Stam.
• Anthony Hoogs.

GRANTS

UIUC:
• National Science Foundation: *Toward Category-Level Object Recognition*, J. Ponce (PI) and Y. LeCun, IIS-0535152/0535166, 2005-2008, $600,000 ($345,000 for UIUC).
• France Telecom R&D: *UIUC-France Telecom Collaboration: Learning Part-Based Models of Articulated Objects*, J. Ponce (PI), 2006-2007, $93,368.
• National Science Foundation: *Collaborative Research: Toward Category-Level Object Recognition*, J. Ponce (PI) and Y. LeCun, IIS-0535152/0535166, 2005-2008, $600,000.
• Toyota Motor Corporation: *UIUC-Toyota Collaboration: Scene Segmentation and Recognition*, J. Ponce (PI), 2005-2006, $101,438.
• National Science Foundation: *Toward 3D Object Recognition*, J. Ponce (PI), IIS-0308087, 2003-2006, $240,000.
• National Science Foundation: *ITR: An Integrated Approach to 3D Photography Using Shape, Texture, and Motion Cues*, J. Ponce (PI), IIS-0312438, 2003-2006, $381,485.
• Toyota Motor Corporation: *UIUC-Toyota Collaboration: 3D Object Modeling, Recognition and Classification from Photographs*, J. Ponce (PI), 2004-2005, $73,000.
• National Science Foundation: *Designing Tomorrow's Category-Level Object Recognition Systems*, J. Ponce (PI), IIS-0335780, 2003, $20,000.
• National Science Foundation: *Capture Regions for Grasping, Manipulating, and Re-Orienting Parts*,

J. Ponce (PI), IIS-9907009, 1999-2002, $300,000.
• National Science Foundation: *Algorithms for Constructing Immobilizing Fixtures and Grasps of Three-Dimensional Objects*, J. Ponce (PI), IRI-9634393, 1996-1999, $154,355.
• National Science Foundation: *Generalized Cylinders Revisited*, J. Ponce (PI), IRI-9634312, 1996-1999, $154,355.
• National Science Foundation: *Modeling and Recognition of Arbitrary Curved Objects from Image Contours*, Jean Ponce (PI) and David J. Kriegman, IRI-9224815, 1993-1997, $330,000.
• National Science Foundation: *Practical Algebraic Techniques for Robotics and Computer Vision*, Jean Ponce (PI), Seth Hutchinson, and David J. Kriegman, NSF CISE Instrumentation, CDA 91-21899 EQ, 1992, $146,624.
• National Science Foundation: *Representations and Algorithms for Recognizing and Locating 3D curved Objects from Monocular Images*, Jean Ponce (PI) and David J. Kriegman, IRI-9015749, 1991–1993, $280,000.

ENS:
• ERC Advanced Grant: *VideoWorld*, Jean Ponce, PI (2011-2015).
• MSR-INRIA Laboratory: *Image and Video Mining for the Sciences and Humanities*, Jean Ponce, PI (2008-2010). Joint project with the INRIA VISTA and LEAR teamns, MSR, and INA.
• Agence Nationale de la Recherche (ANR): *Graphical models and applications*, Francis Bach, PI (2008-2010). Joint project between Ecole Nationale Supérieure des Mines de Paris, Ecole Nationalte Supérieure des Télécommunications, and INRIA.
• Agence Nationale de la Recherche: *High-fidelity image-based modeling and rendering*, Josef Sivic, PI (2008-2010). Joint project between the WILLOW and ARTIS INRIA teams, and the COMSEE team of LASMEA in Clermont-Ferrand.
• Agence Nationale de la Recherche: *Triangles*, O. Devillers, PI (2008–2010). Joint project between the GEOMETRICA and WILLOW INRIA teams, and Université de Lyon.
• Délégation Générale pour l'Armement (DGA): *Development and evaluation of new algorithms for automated target recognition* (2008-2010). Joint project with BERTIN, the University of Caen and the VISTA INRIA team.
• Délégation Générale pour l'Armement: *Projet ITISECURE : sécurisation d'itinéraires contre les IED par analyse optique*, Jean Ponce (PI), 2008. Joint project between the EVITECH company and WILLOW.
• Getty Conservation Institute: *Stereo methods for the quantitative evaluation of stone deteroriation on the Copan hyeroglyphic stairway*, Jean Ponce (PI), 2007.

PUBLICATIONS

I have published one textbook, three edited volumes, 48 journal articles, and over 100 peer-reviewed papers in international conferences. My h-index is 52, with over 15,000 citations.

BOOK

1. David Forsyth and Jean Ponce, **Computer Vision: A Modern Approach**, Prentice-Hall, 2003. (This textbook is used in over 40 universities worldwide, including MIT, UC Berkeley, Carnegie-Mellon University, Oxford University. Chinese, Japanese, and Russian translations are available. It was entirely rewritten for the second edition, published by Pearson in November 2011.)

EDITED BOOKS

1. Jean Ponce, Martial Hebert, Cordelia Schmid, and Andrew Zisserman (eds.), **Toward Category-Level Object Recognition**, Springer-Verlag, Lecture Notes in Computer Science, Vol. 4170, 2007.

2. J. Ponce, A. Zisserman and M. Hebert (eds.), **Object Representation in Computer Vision II**, Springer-Verlag, Lecture Notes in Computer Science 1144, October 1996.

3. M. Hebert, J. Ponce, T.E. Boult, and A. Gross (eds.), **Object Representation in Computer Vision**, Springer-Verlag, Lecture Notes in Computer Science 994, 1995.

JOURNAL ARTICLES

1. Florent Couzinie, Julien Mairal, Francis Bach, Jean Ponce, *Dictionary Learning for Deblurring and Digital Zoom*. Submitted to Journal of Mathematical Imaging and Vision, 2012.

2. Oliver Whyte, Josef Sivic, Andrew Zisserman, Jean Ponce, *Non-Uniform Deblurring for Shaken Images*, International Journal of Computer Vision, 98(2):168-186, 2012.

3. Julien Mairal, Francis Bach, and Jean Ponce, *Task-Driven Dictionary Learning*, IEEE Transactions on Pattern Analysis and Machine Intelligence, 34(4):791-804, 2012.

4. Olivier Duchenne, Francis Bach, In-So Kweon, Jean Ponce, *A Tensor-Based Algorithm for High-Order Graph Matching*, IEEE Transactions on Pattern Analysis and Machine Intelligence, 33(12):2383-2395, 2011.

5. Yasutaka Furukawa and Jean Ponce, *Accurate, Dense, and Robust Multi-View Stereopsis*, IEEE Transactions on Pattern Analysis and Machine Intelligence, 32(8), 2010.

6. Hui Kong, Jean-Yves Audibert, and Jean Ponce, *Detecting Abandoned Objects with a Moving Camera*, IEEE Transactions on Image Processing, 9(18):2201-2210, 2010.

7. Hui Kong, Jean-Yves Audibert, and Jean Ponce, *General Road Detection from a Single Image*, IEEE Transactions on Image Processing, 9(18):2211-2220, 2010.

8. Julien Mairal, Francis Bach, Jean Ponce, and Guillermo Sapiro, *Online Learning for Matrix Factorization and Sparse Coding*, Journal of Machine Learning Research, 11:19-60, January 2010.

9. Yasutaka Furukawa and Jean Ponce, *Accurate Camera Calibration from Multi-View Stereo and Bundle Adjustment*, the International Journal of Computer Vision, 84(3):257-268, 2009.

10. Yasutaka Furukawa and Jean Ponce, *Carved Visual Hulls for Image-Based Modeling*, the International Journal of Computer Vision, 81(1):53–67, 2009. Special issue dedicated to the best papers of ECCV'06.

11. Jeff Erickson, Shripad Thite, Fred Rothganger and Jean Ponce, *Capturing a Convex Object with Three Discs*, the IEEE Transaction on Robotics and Automation, 23(6):1133–1140, 2007.

12. Svetlana Lazebnik, Yasutaka Furukawa, and Jean Ponce, *Projective Visual Hulls*, the International Journal of Computer Vision, 74(2):137–165, 2007.

13. Fred Rothganger, Svetlana Lazebnik, Cordelia Schmid and Jean Ponce, *Segmenting, Modeling, and Matching Video Clips Containing Multiple Moving Objects*, IEEE Transactions on Pattern Analysis and Machine Intelligence, 29(3):477–491, 2007.

14. Fred Rothganger, Svetlana Lazebnik, Cordelia Schmid and Jean Ponce, *3D Object Modeling and Recognition Using Local Affine-Invariant Image Descriptors and Multi-View Spatial Constraints*, International Journal of Computer Vision, 66(3):231–259, 2006.

15. Yasutaka Furukawa, Amit Sethi, Jean Ponce and David Kriegman, *Robust Structure and Motion from Outlines of Smooth Curved Surfaces*, IEEE Transactions on Pattern Analysis and Machine Intelligence, 28(2):302-315, 2006.

16. Svetlana Lazebnik, Cordelia Schmid and Jean Ponce, *A Sparse Texture Representation Using Local Affine Regions*, IEEE Transactions on Pattern Analysis and Machine Intelligence, 27(8):1265–1278, 2005.

17. Svetlana Lazebnik and Jean Ponce, *The Local Projective Shape of Smooth Surfaces and Their Outlines*, International Journal of Computer Vision, 63(1):65-83, 2005.

18. Amit Sethi, David Renaudie, David Kriegman and Jean Ponce, *Curve and Surface Duals and the Recognition of Curved 3D Objects from their Silhouettes*, International Journal of Computer Vision, 58(1):73-86, 2004.

19. Attawith Sudsang, Fred Rothganger and Jean Ponce, *Motion Planning for Disc-Shaped Robots Pushing a Polygonal Object in the Plane*, IEEE Transactions on Robotics and Automation, 18(4):550-562, 2002.

20. Sbastien Blind, Christopher McCullough, Srinivas Akella and Jean Ponce, *Manipulating Parts with an Array of Pins: A Method and a Machine*, International Journal of Robotics Research, 20(10):808-818, 2001.

21. Sung-il Pae and Jean Ponce, *On Computing Structural Changes in Evolving Surfaces and their Appearance*, International Journal of Computer Vision, 43(2):113–131, 2001.

22. Yakup Genc and Jean Ponce, *Image-Based Rendering Using Parameterized Image Varieties*, International Journal of Computer Vision, 41(3):143–170, 2001.

23. Ilan Shimshoni and Jean Ponce, *Probabilistic 3D Object Recognition*, International Journal of Computer Vision, 36(1):51-70, 2000.

24. Attawith Sudsang, Jean Ponce and Narayan Srinivasa, *Grasping and In-Hand Manipulation: Geometry and Algorithms*, Algorithmica, 26:466-493, 2000.

25. Tanuja Joshi, Narendra Ahuja and Jean Ponce, *Structure and Motion Estimation from Dynamic Silhouettes under Perspective Projection*, International Journal of Computer Vision, 31(1):31-50, 1999.

26. B. Vijayakumar, David J. Kriegman and Jean Ponce, *Invariant-Based Recognition of Complex Curved 3D Objects from Images Contours*, Computer Vision and Image Understanding, 72(3):287-303, 1998.

27. Attawith Sudsang, Jean Ponce and Narayan Srinivasa, *Grasping and In-Hand Manipulation: Experiments with a Reconfigurable Gripper*, Advanced Robotics, 12(5):509-533, 1998.

28. Steve Sullivan and Jean Ponce, *Automatic Model Construction, Pose Estimation, and Object Recognition from Photographs Using Triangular Splines*, IEEE Transactions on Pattern Recognition and Machine Intelligence, 20(10):1091–1096, 1998.

29. Jean Ponce and Yakup Genc, *Epipolar Geometry and Linear Subspace Methods: A New Approach to Weak Calibration*, International Journal of Computer Vision, 28(3):223–243, 1998.

30. Tanuja Joshi, B. Vijayakumar, David J. Kriegman and Jean Ponce, *Hot Curves for Modelling and Recognition of Smooth Curved 3D Objects*, Image and Vision Computing, 15(7):479-498, 1997.

31. Alison Noble, Dale Wilson and Jean Ponce, *On Computing Aspect Graphs of Smooth Shapes from Volumetric Data*, Computer Vision and Image Understanding, special issue on Biomedical Image Analysis, 66(2):179–192, 1997.

32. Ilan Shimshoni and Jean Ponce, *Finite-Resolution Aspect Graphs of Polyhedral Objects*, IEEE Transactions on Pattern Analysis and Machine Intelligence, 19(4):315-327, 1997.

33. Ilan Shimshoni and Jean Ponce, *Recovering the Shape of Polyhedra Using Line-Drawing Analysis and Complex Reflectance Models*, Computer Vision and Image Understanding, special issue on Physics-Based Vision, 65(2):296-310, 1997.

34. Jean Ponce, Steve Sullivan, Attawith Sudsang, Jean-Daniel Boissonnat, and Jean-Pierre Merlet, *On Computing Four-Finger Equilibrium and Force-Closure Grasps of Polyhedral Objects*, the International Journal of Robotics Research, 16(1):11-35, 1997.

35. Jean Ponce and Bernard Faverjon, *On Computing Three-Finger Force-Closure Grasps of Polygonal Objects*, IEEE Transactions on Robotics and Automation, 11(6):868-881, 1995.

36. Steve Sullivan, Lorraine Sandford and Jean Ponce, *Using Geometric Distance Fits for 3D Object Modelling and Recognition*, IEEE Transactions on Pattern Analysis and Machine Intelligence, 16(12):1183–1196, 1994.

37. Gabriel Taubin, Fernando Cukierman, Steve Sullivan, Jean Ponce et David J. Kriegman, *Parameterized Families of Polynomials for Bounded Algebraic Curve And Surface Fitting*, IEEE Transactions on Pattern Analysis and Machine Intelligence, 16(3):287-303, 1994.

38. Jean Ponce, Darrell Stam and Bernard Faverjon, *On Computing Force-Closure Grasps of Curved Two-Dimensional Objects*, International Journal of Robotics Research, 12(3):263–273, 1993.

39. Sylvain Petitjean, Jean Ponce and David J. Kriegman, *Computing Exact Aspect Graphs of Curved Objects: Algebraic Surfaces*, International Journal of Computer Vision, 9(3):231–255, 1992.

40. Jean Ponce, Anthony Hoogs and David J. Kriegman, *On Using CAD Models to Compute the Pose of Curved 3D Objects*, Computer Vision, Graphics, and Image Processing: Image Understanding, special issue on Directions in Automated CAD-Based Vision, 55(2):184–197, 1992.

41. Jean Ponce, *On Characterizing Ribbons and Finding Skewed Symmetries*, Computer Vision, Graphics, and Image Processing, 52(3):328-340, 1990.

42. David J. Kriegman and Jean Ponce *On Recognizing and Positioning Curved 3D Objects from Image Contours*, IEEE Transactions on Pattern Analysis and Machine Intelligence, 12(12):1127–1137, 1990.

43. David J. Kriegman and Jean Ponce, *Computing Exact Aspect Graphs of Curved Objects: Solids of Revolution*, the International Journal of Computer Vision, 5(2):119–135, 1990.

44. Jean Ponce, *Straight Homogeneous Generalized Cylinders: Differential Geometry and Uniqueness Results*, the International Journal of Computer Vision, 4(1):79–100, 1990.

45. Jean Ponce and David J. Kriegman, *An Algebraic Approach to Computer Vision*, Revue d'Intelligence Artificielle, special issue on Geometric Reasoning, Vol. 3, No. 2, pp. 105–136, 1989.

46. Jean Ponce, David Chelberg, Wallace Mann, *Invariant Properties of Straight Homogeneous Generalized Cylinders and their Contours*, IEEE Transactions on Pattern Analysis and Machine Intelligence, 11(9):951-966, 1989.

47. Jean Ponce and David Chelberg *Finding the Limbs and Cusps of Generalized Cylinders*, the International Journal of Computer Vision, 1(3):195–210, 1987.

48. Jean Ponce and Olivier Faugeras, *An Object Centered, Hierarchical Representation for 3D Objects: the Prism Tree*, Computer Vision, Graphics, and Image Processing, 38(1):1–28, 1987.

49. Michael Brady, Jean Ponce, Alan Yuille and Haruo Asada, *Describing Surfaces*, Computer Vision, Graphics, and Image Processing, 32(1):1–28, 1985.

BOOK CHAPTERS

1. Oliver Whyte, Josef Sivic, Andrew Zisserman, and Jean Ponce, *Efficient, Blind, Spatially-Variant Deblurring for Shaken Images*, in **Motion Deblurring: Algorithms and Systems**, Cambridge University Press (2013), to appear.

2. Svetlana Lazebnik, Cordelia Schmid, and Jean Ponce, *Spatial Pyramid Matching*, in **Object Categorization: Computer and Human Vision Perspectives**, S. Dickinson (ed.), Cambridge University Press, 2008.

3. Cordelia Schmid, Gyorgy Dorko, Svetlana Lazebnik, Krystian Mikolajczyk, and Jean Ponce, *Pattern Recognition with Local Invariant Features*, in **Handbook of Pattern Recognition and Computer Vision**, 3rd edition. C.H. Chen and P.S.P Wang editors, World Scientific Publishing Co., 2004.

4. Jean Ponce, Martha Cepeda, Sung-il Pae and Steve Sullivan, *Shape Models and Object Recognition*, in **Shape, Contour and Grouping in Computer Vision**, D.A. Forsyth, J.L. Mundy, V. Gesu and R. Cipolla, (eds.), Springer-Verlag, Lecture Notes in Computer Science 1681, pp. 31-55, 1999.

5. J. Ponce, *Manipulation and Grasping*, in **The MIT Encyclopedia of Cognitive Sciences**, R. Wilson and F. Keil (eds.), MIT Press, pp. 508-511, 1999.

6. A. Sudsang, J. Ponce and N. Srinivasa, *Algorithms for Constructing Immobilizing Fixtures and Grasps of Three-Dimensional Objects*, in **Algorithms for Robotics Motion and Manipulation (WAFR 1996)**, J.-P. Laumont and M. Overmars (eds.), AK Peters, Ltd., pp. 363-380, 1997.

7. J. Ponce, A. Sudsang, S. Sullivan, B. Faverjon, J.-D. Boissonnat, and J.-P. Merlet, *Algorithms for Computing Multi-Finger Force-Closure Grasps of Polyhedral Objects*, in **Algorithmic Foundations of Robotics**, K. Goldberg, D. Halperin, J.-C. Latombe, and R. Wilson (eds.), AK Peters, Ltd., pp. 167-184, 1995.

8. Jean Ponce, David J. Kriegman, Sylvain Petitjean, Steven Sullivan, Gabriel Taubin, B. Vijayakumar, *Representations and Algorithms for 3D Curved Object Recognition*, in **Three-Dimensional Object Recognition Systems**, P. Flynn and A. Jain (eds.), Elsevier Press, pp. 327-352, 1993.

9. Jean Ponce and David J. Kriegman, *Elimination Theory and Computer Vision: Recognition and Positioning of Curved 3D Objects from Range, Intensity, or Contours*, in **Symbolic and Numerical Computation for Artificial Intelligence**, B. Donald, D. Kapur and J. Mundy (eds.), Computational Mathematics and Applications Series, Academic Press, pp. 123-146, 1992.

10. Jean Ponce and David J. Kriegman, *Toward 3D Curved Object Recognition from Image Contours*, in **Geometric Invariance in Computer Vision**, J. Mundy and A. Zisserman (eds.), MIT Press, pp. 408-439, 1992.

11. David J. Kriegman and Jean Ponce, *A New Curve Tracing Algorithm and some Applications*, in **Curves and Surfaces**, P.J. Laurent, A. Le Méhauté and L.L. Schumaker (eds.), Academic Press, New York, pp. 267-270, 1991.

12. David J. Kriegman and Jean Ponce *On Recognizing and Positioning Curved 3D Objects from Image Contours*, in **Selected Papers on Automatic Object Recognition**, H. Nasrem (ed.), SPIE Milestones Series, SPIE Optical Engineering Series Press, pp. 213-223, 1991. (Reprinted from IEEE Transactions on Pattern Analysis and Machine Intelligence, 1990.)

13. Jean Ponce and Michael Brady, *Toward a Surface Primal Sketch*, in **Three-Dimensional Machine Vision**, T. Kanade (ed.), Kluwer Academic Publishers, pp. 195-240, 1987.

14. Michael Brady, Jean Ponce, Alan Yuille, and Haruo Asada, *Describing Surfaces*, in **Human and Machine Vision II**, A. Rosenfeld (ed.), Academic Press, pp. 58-85, 1986. (Reprinted from Computer Vision, Graphics, and Image Processing 1985.)

15. Olivier Faugeras, Jean-Daniel Boissonnat, François Germain, Martial Hebert, François Krizé, Philippe Mussi, Eric Pauchon, and Jean Ponce, *Towards a Flexible Vision System*, in **Robot Vision Book**, A. Pugh (ed.), IFS, UK, pp. 129-142, 1982.

REFEREED CONFERENCE PAPERS

1. P. Bojanowski, F. Bach, I. and Laptev, J. Ponce, C. Schmid, and J. Sivic, *Finding Actors and Actions in Movies*, Proc. International Conference on Computer Vision, 2013. Note: To appear.

2. M. Cho, K. Alahari, and J. Ponce, *Learning Graphs to Match*, Proc. International Conference on Computer Vision, 2013. Note: To appear.

3. J. Sun and J. Ponce, *Learning Discriminative Part Detectors for Image Classification and Cosegmentation*, Proc. International Conference on Computer Vision, 2013. Note: To appear.

4. F. Couzinié-Devy, J. Sun, K. Alahari, and J. Ponce, *Learning to Estimate and Remove Non-uniform Image Blur*, Proc. IEEE Conference on Computer Vision and Pattern Recognition, 2013.

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SOFTWARE

Several significant sotware packages developed in my research groups at UIUC and INRIA are available under open-source licenses:

- *3D recognition software:* This is a C implementation of the recognition method described in [Rothganger et al., IJCV'06]. It is avaible at: `http://www-cvr.ai.uiuc.edu/ponce_grp/software/3d.html`, and has been transfered to Bertin Technologies and Toyota.

- *PMVS:* This is a C implementation of the multi-view stereo algorithm described in [Furukawa and Ponce, PAMI'10]. It is available at: `http://http://www.di.ens.fr/pmvs/`.

- *SPAMS:* This is an optimization toolbox for efficient sparse coding and dictionary learning. See [Mairal et al., JMLR'10] for details. It is available at: `http://www.di.ens.fr/willow/SPAMS/`.