Philippos Mordohai

Professor
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Education

Ph.D. in Electrical Engineering University of Southern California, Los Angeles, CA (2005)

M.S. in Electrical Engineering, University of Southern California, Los Angeles, CA (2000)

Diploma in Electrical and Computer Engineering, Aristotle University of Thessaloniki, Greece (1998)

Professional Experience

Professor Department of Computer Science, Stevens Institute of Technology (Sep. 2020 - present)

Associate Professor Department of Computer Science, Stevens Institute of Technology (Sep. 2015 - Aug. 2020)

Visiting Researcher, Google (Mar. 2018 - July 2018)

Assistant Professor Department of Computer Science, Stevens Institute of Technology (Aug. 2008 - Aug. 2015)

Postdoctoral Researcher Department of Computer and Information Science, University of Pennsylvania (Aug. 2007 - Aug. 2008)

Postdoctoral Research Associate Department of Computer Science, University of North Carolina at Chapel Hill (Sep, 2005 - Jul. 2007)

Research Interests

- Binocular, multiple-view and video-based 3D reconstruction
- Robotic perception
- 3D shape representation and object recognition
- Perceptual organization
- Active vision

Grants

1. NSF National Robotics Initiative: *Cooperative Underwater Structure Inspection and Mapping*, PI: P. Mordohai. 10/2020-09/2024.
2. DOE SBIR Phase II: *"Hypertunnel" - a MR/VR remote collaboration system*, PI: E. Neeter (FactualVR), Stevens PI: P. Mordohai. 01/2020-08/2021.
3. DOE SBIR Phase I: *"Hypertunnel" - a MR/VR remote collaboration system*, PI: E. Neeter (FactualVR), Stevens PI: P. Mordohai. 01/2019-06/2019.
4. Google AR/VR Research Awards: *Anytime Stereo Reconstruction*, PI: P. Mordohai. 12/2018-12/2019.
5. NSF National Robotics Initiative: *Autonomous Quadrotors for 3D Modeling and Inspection of Outdoor Infrastructure*, PI: P. Mordohai. 09/2016-08/2021.
6. NIH National Robotics Initiative: *An Egocentric Computer Vision Based Active Learning Co-Robot Wheelchair*, Original PI: Gang Hua, PI since 09/2015: P. Mordohai 09/2014-02/2019.
7. NSF Robust Intelligence: *Learning to Eliminate Heuristics in Stereo Vision*, PI: P. Mordohai. 09/2015-08/2020.
8. NSF Robust Intelligence: *Group Travel Grant for the Doctoral Consortium of the IEEE Conference on Computer Vision and Pattern Recognition 2014*, PI: P. Mordohai. 05/2014-04/2015.
9. NSF Robust Intelligence: *Group Travel Grant for the Doctoral Consortium of the IEEE Conference on Computer Vision and Pattern Recognition*, PI: P. Mordohai. 05/2013-04/2014.
10. NVIDIA: *CUDA Research Center*, PIs: I. Florescu, R. Chatterjee, N. Ganesan and P. Mordohai, co-PIs: A. Compagnoni, J. He, G. Hua, G. Kamberov, H. Wang, R. Chandramouli, K. P. Subbalakshmi, J. Toland, K. Khashanah, S. Yang, G. Creamer, E. Gousgounis and W. Mason. 4/2013.
11. NSF Major Research Instrumentation: *Acquisition of a Large Volume, Real-time, High Resolution, Motion Capture System for an Interdisciplinary Research Facility*, PI: D. Cappelleri, co-PIs: P. Mordohai, M. Zavlanos, A. Valdevit and M. Blackburn. 09/2012-08/2015.
12. NSF Robust Intelligence: *Uncertainty-driven Dynamic 3D Reconstruction*, PI: P. Mordohai. 08/2012-07/2016.
13. DHS Exploratory Research: *Development of Volumetric Imaging Methods for Reliable Detection of Nuclear Materials*, PI: L. Mihailescu (Lawrence Berkeley National Laboratory), Stevens PI: P. Mordohai. 09/2010-10/2012.
14. Google Research Awards: *Object Recognition in Large-Scale Scenes from Video and Point Cloud Streams*, PI: P. Mordohai, co-PIs: G. Kamberov and G. Kamberova. 03/2010.
15. NSF Robust Intelligence: *Organizing Recognition: the Uses of Perceptual Organization*, PI: J. Oliensis, co-PI: P. Mordohai. 09/2009-09/2013.
16. NSF Computing Research Infrastructure: *Flexible Mobile Platforms for Continuous Range and Imagery Collection*, PI: G. Kamberov, co-PIs: P. Mordohai, G. Kamberova, H.Q. Dinh and J.

Oliensis. 08/2009-07/2013.

Publications

Dissertations and Book

1. **P. Mordohai** and G. Medioni. *Tensor Voting: A Perceptual Organization Approach to Computer Vision And Machine Learning.* A.C. Bovik (editor). Synthesis Lectures on Image, Video, and Multimedia Processing. Morgan & Claypool. 136 pages. November, 2006
2. **P. Mordohai**. *A Perceptual Organization Approach for Figure Completion, Binocular and Multiple-View Stereo and Machine Learning using Tensor Voting.* Ph.D. Thesis. August, 2005
3. **P. Mordohai**. *Netscape Navigator plug-in for decoding pyramid-encoded medical images with watermarks.*(In Greek). Diploma thesis. Electrical and Computer Engineering Department Aristotle University of Thessaloniki, Greece. June, 1998

Journal Articles

1. M. Poggi, F. Tosi, K. Batsos, **P. Mordohai**, and S. Mattoccia. *On the Synergies between Machine Learning and Binocular Stereo for Depth Estimation from Images: a Survey.* IEEE Transactions on Pattern Analysis and Machine Intelligence, 2021 (impact factor in 2020: 16.389).
2. M. Kutbi, X. Du, Y. Chang, B. Sun, N. Agadakos, H. Li, G. Hua, and **P. Mordohai**. *Usability Studies of an Egocentric Vision-Based Robotic Wheelchair.* ACM Transactions on Human-Robot Interaction, vol. 10, no. 1, pp. 1-23, 2020
3. C. Freundlich, Y. Zhang, A. Zhu, **P. Mordohai**, and M. M. Zavlanos. *Controlling a Robotic Stereo Camera under Image Quantization Noise.* International Journal of Robotics Research, vol. 36, no. 12, pp 1268-1285, 2017 (impact factor: 4.047).
4. A. Spyropoulos and **P. Mordohai.** *Correctness Prediction, Accuracy Improvement and Generalization of Stereo Matching using Supervised Learning.* International Journal of Computer Vision, vol. 118, no. 3, pp. 300-318, 2016 (impact factor: 8.222).
5. H. Guo, D. Zhu and **P. Mordohai.** *Correspondence Estimation for Non-Rigid Point Clouds with Automatic Part Discovery.* The Visual Computer, 2015 (impact factor: 1.060).
6. X. Hu and **P. Mordohai**. *A Quantitative Evaluation of Confidence Measures for Stereo Vision.* IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 34, no. 11, pp. 2121-2133, 2012. (impact factor: 4.795)
7. **P. Mordohai** and G. Medioni. *Dimensionality Estimation, Manifold Learning and Function Approximation using Tensor Voting.* Journal of Machine Learning Research, vol. 11, pp. 411-450, 2010. (impact factor: 2.974)
8. V. Kwatra, **P. Mordohai**, S. Kumar Penta, R. Narain, M Carlson, M. Pollefeys and M. Lin. *Fluid in Video: Augmenting Real Video with Simulated Fluids.* Computer Graphics Forum, vol. 27, no. 2, p. 487-496, 2008. (impact factor: 1.86)

9. M. Pollefeys, D. Nistér, J.-M. Frahm, A. Akbarzadeh, **P. Mordohai**, B. Clipp, C. Engels, D. Gallup, S.-J. Kim, P. Merrell, C. Salmi, S. Sinha, B. Talton, L. Wang, Q. Yang, H. Stewénius, R. Yang, G. Welch, H. Towles. *Detailed Real-Time Urban 3D Reconstruction From Video.* International Journal of Computer Vision, vol. 78, no. 2-3, pp. 143-167, July 2008. (impact factor: 5.358)
10. **P. Mordohai** and G. Medioni. *Stereo using Monocular Cues within the Tensor Voting Framework.* IEEE Trans. on Pattern Analysis and Machine Intelligence, vol. 28, no. 6, pp. 968-982, June 2006. (impact factor: 4.31)
11. W.S. Tong, C.K. Tang, **P. Mordohai**, and G. Medioni. *First Order Augmentations to Tensor Voting for Boundary Inference and Multiscale Analysis in 3-D.* IEEE Trans. on Pattern Analysis and Machine Intelligence, vol. 26, no. 5, pp. 594 - 611, May 2004. (impact factor: 4.35)
12. M.S. Lee, G. Medioni and **P. Mordohai**. *Inference of Segmented Overlapping Surfaces from Binocular Stereo.* IEEE Trans. on Pattern Analysis and Machine Intelligence, vol. 24, no. 6, pp. 824-837, June 2002. (impact factor: 2.92)

Refereed Conference and Workshop Papers (with Proceedings)

1. Marios Xanthidis, Bharat Joshi, Nare Karapetyan, Monika Roznere, Weihan Wang, James Johnson, Alberto Quattrini Li, Jesse Casana, Philippos Mordohai, Srihari Nelakuditi, Ioannis Rekleitis. *Towards Multi-Robot Shipwreck Mapping.* First Advanced Marine Robotics TC Workshop: Active Perception, 2021
2. C. Cai and **P. Mordohai**. *Do End-to-end Stereo Algorithms Under-utilize Information?* International Conference on 3D Vision (3DV), 2020
3. C. Cai, M. Poggi, S. Mattoccia, and **P. Mordohai**. *Matching-space Stereo Networks for Cross-domain Generalization.* International Conference on 3D Vision (3DV), 2020
4. **P. Mordohai**, K. Batsos, A. Makadia, and N. Snavely. *NBVC: A Benchmark for Depth Estimation from Narrow-Baseline Video Clips.* IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2020
5. M. Kutbi, Y. Chang, B. Sun, and **P. Mordohai**. *Learning to Navigate Robotic Wheelchairs from Demonstration: Is Training in Simulation Viable?* International Workshop on Assistive Computer Vision and Robotics, 2019
6. B. Sun and **P. Mordohai**. *Oriented Point Sampling for Plane Detection in Unorganized Point Clouds* IEEE International Conference on Robotics and Automation (ICRA), Motreal, Canada, 2019.
7. I. Tsekourakis and **P. Mordohai**. *Measuring the Effects of Temporal Coherence in Depth Estimation for Dynamic Scenes.* CVPR workshop on Photogrammetric Computer Vision workshop, Long Beach, CA, 2019.
8. B. Abruzzo, D. Cappelleri and **P. Mordohai**. *A Collaborative Visual Localization Scheme for a Low-Cost Heterogeneous Robotic Team with Non-Overlapping Perspectives.* International Design Engineering Technical Conferences (IDETC), Anaheim, CA, 2019.
9. K. X. Dai, H. Guo, **P. Mordohai**, F. Marinello, A. Pezzuolo, Q. L. Feng and Q. D. Niu. *Non-Rigid Multi-Body Tracking in RGBD Streams* International Society for Photogrammetry and Remote

Sensing (ISPRS) Geospatial Week, Enschede, The Netherlands, 2019.

10. K. Batsos and **P. Mordohai**. *RecResNet: A Recurrent Residual CNN Architecture for Disparity Map Enhancement.* International Conference on 3D Vision (3DV), 2018. (acceptance rate for oral presentations: 14.3%)

11. K. Batsos, C. Cai and **P. Mordohai**. *CBMV: A Coalesced Bidirectional Matching Volume for Disparity Estimation.* IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2018. (acceptance rate: 29.6%)

12. I. Tsekourakis and **P. Mordohai**. *A Comparison of Scene Flow Estimation Paradigms.* Representation, analysis and recognition of shape and motion FroM Image data (RFMI), 2017.

13. C. LeGendre, K. Batsos and **P. Mordohai**. *High-Resolution Stereo Matching based on Sampled Photoconsistency Computation.* British Machine Vision Conference, 2017. (acceptance rate: 29.6%)

14. Y. Chang, M. Kutbi, N. Agadakos, B. Sun and **P. Mordohai**. *A Shared Autonomy Approach for Wheelchair Navigation based on Learned User Preferences.* International Workshop on Assistive Computer Vision and Robotics, 2017.

15. M. Kutbi, Y. Chang and **P. Mordohai**. *Hands-free Wheelchair Navigation Based on Egocentric Computer Vision: A Usability Study.* IROS workshop on Assistance and Service Robotics in a Human Environment, 2017.

16. H. Li, M. Kutbi, X. Lin, C. Cai, **P. Mordohai.** and Gang Hua. *An Egocentric Computer Vision based Co-Robot Wheelchair*, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2016.

17. M. Ehrlich and **P. Mordohai.** *Discriminative Hand Localization in Depth Images.* IEEE Symposium on 3D User Interfaces, 2016.

18. R. Gouveia, A. Spyropoulos and **P. Mordohai.** *Confidence Estimation for Superpixel-based Stereo Matching.* International Conference on 3D Vision (3DV), 2015.

19. A. Spyropoulos and **P. Mordohai.** *Ensemble Classifier for Combining Stereo Matching Algorithms.* International Conference on 3D Vision (3DV), 2015.

20. I. Tsekourakis and **P. Mordohai.** *Consistent 3D Background Model Estimation from Multi-Viewpoint Videos.* International Conference on 3D Vision (3DV), 2015.

21. C. Freundlich, M. M. Zavlanos and **P. Mordohai.** *Exact Bias Correction and Covariance Estimation for Stereo Vision.* IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2015. (acceptance rate: 28.4%)

22. C. Freundlich, **P. Mordohai** and M. M. Zavlanos. *Optimal Path Planning and Resource Allocation for Active Target Localization.* American Control Conference, 2015.

23. A. Zelener, **P. Mordohai** and I. Stamos. *Classification of Vehicle Parts in Unstructured 3D Point Clouds*, International Conference on 3D Vision (3DV), Tokyo, Japan, 2014.

24. K. Jordan and **P. Mordohai.** *A Quantitative Evaluation of Surface Normal Estimation in Point Clouds*, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Chicago,

IL, 2014.

25. L. Teran and **P. Mordohai.** *3D Interest Point Detection via Discriminative Learning*, 13th European Conference on Computer Vision (ECCV), Zurich, Switzerland, 2014. (acceptance rate: 25.1%)

26. Y. Lin, G. Hua and **P. Mordohai.** *Egocentric Object Recognition leveraging the 3D Shape of the Grasping Hand*, Assistive Computer Vision and Robotics workshop, Zurich, Switzerland, 2014.

27. A. Spyropoulos, N. Komodakis, and **P. Mordohai.** *Learning to detect ground control points for improving the accuracy of stereo matching.* IEEE Conference on Computer Vision and Pattern Recognition, 2014. (acceptance rate: 29.9%)

28. C. Freundlich, **P. Mordohai** and M. M. Zavlanos. *Hybrid Control for Mobile Target Localization with Stereo Vision.* IEEE International Conference on Decision and Control (CDC), Firenze, Italy, 2013.

29. C. Freundlich, **P. Mordohai** and M. M. Zavlanos. *A Hybrid Control Approach to the Next-Best-View Problem using Stereo Vision.* IEEE International Conference on Robotics and Automation (ICRA), Karlsruhe, Germany, 2013. (acceptance rate for oral presentations: 17.5%)

30. R. Liu, H. Wang , **P. Mordohai** and Hui Xiong. *Integrity Verification of K-means Clustering Outsourced to Infrastructure as a Service (IaaS) Providers.* SIAM International Conference on Data Mining (SDM), Austin, TX, USA, 2013. (acceptance rate: 25.5%)

31. X. Hu and **P. Mordohai**. *Least Commitment, Viewpoint-based, Multi-view Stereo*, 3DIMPVT, Zurich, Switzerland, 2012.

32. X. Hu and **P. Mordohai**. *Robust Probabilistic Occupancy Grid Estimation from Positive and Negative Distance Fields*, 3DIMPVT, Zurich, Switzerland, 2012.

33. **P. Mordohai**. *On the Evaluation of Scene Flow Estimation*, Unsolved Problems in Optical Flow and Stereo Estimation workshop, Firenze, Italy, 2012.

34. C. Yuan, M. Liao, X. Hu and **P. Mordohai**. *Sensing and Augmented-Reality Technologies for Mobile 3D Platforms*, Society for Information Display's Display Week, 2012.

35. H.Q. Dinh, L. Xu, **P. Mordohai** and T. Ramsay. *Detecting Patterns in Vector Fields.* AIAA Aerospace Sciences Meeting, 2011.

36. L. Xu and **P. Mordohai**. *Automatic Facial Expression Recognition using Bags of Motion Words.* British Machine Vision Conference (BMVC), 2010. (acceptance rate: 34%)

37. X. Hu and **P. Mordohai**. *Evaluation of Stereo Confidence Indoors and Outdoors.* IEEE Conference on Computer Vision and Pattern Recognition(CVPR), 2010. (acceptance rate: 26.8%)

38. A. Toshev, **P. Mordohai** and B. Taskar. *Detecting and Parsing Architecture at City Scale from Range Data.* IEEE Conference on Computer Vision and Pattern Recognition(CVPR), 2010. (acceptance rate: 26.8%)

39. **P. Mordohai**. *The Self-Aware Matching Measure for Stereo.* International Conference on Computer Vision (ICCV), 2009. (acceptance rate: 23.2%)

40. Q. Zhu and **P. Mordohai**. *A Minimum Cover Approach for Extracting the Road Network from Airborne LIDAR Data.* 3-D Digital Imaging and Modeling (3DIM), 2009.

41. A. Patterson, **P. Mordohai** and K. Daniilidis. *Object Detection from Large-Scale 3D Datasets using Bottom-up and Top-down Descriptors.* European Conference on Computer Vision (ECCV), Vol. 4, pp. 553-566, 2008. (acceptance rate: 27.9%)

42. D. Gallup, J.-M. Frahm, **P. Mordohai** and M. Pollefeys. *Variable Baseline/Resolution Stereo.* IEEE Conference on Computer Vision and Pattern Recognition(CVPR), 2008. (acceptance rate for oral presentations: 4%)

43. P. Merrell, A. Akbarzadeh, L. Wang, **P. Mordohai**, J-M. Frahm, R. Yang, D. Nistér and M. Pollefeys. *Real-Time Visibility-Based Fusion of Depth Maps.* International Conference on Computer Vision (ICCV), 2007. (acceptance rate for oral presentations: 3.9%)

44. E.S. Larsen, **P. Mordohai**, M. Pollefeys and H. Fuchs. *Temporally Consistent Reconstruction from Multiple Video Streams Using Enhanced Belief Propagation.* International Conference on Computer Vision (ICCV), 2007. (acceptance rate: 23.5%)

45. S. Sinha, **P. Mordohai** and M. Pollefeys. *Multi-View Stereo via Graph Cuts on the Dual of an Adaptive Tetrahedral Mesh.* International Conference on Computer Vision (ICCV), 2007. (acceptance rate: 23.5%)

46. P. Merrell, **P. Mordohai**, J.-M. Frahm and M. Pollefeys. *Evaluation of Large Scale Scene Reconstruction.* Virtual Representations and Modeling of Large-scale environments (VRML), 2007.

47. **P. Mordohai**, J.-M. Frahm, A. Akbarzadeh, B. Clipp, C. Engels, D. Gallup, Merrell, C. Salmi, S. Sinha, B. Talton, L. Wang, Q. Yang, H. Stewénius, R. Yang, H. Towles, G. Welch, M. Pollefeys and D. Nistér. *Real-Time Video-Based Reconstruction of Urban Environments.* 3D-ARCH'2007: 3D Virtual Reconstruction and Visualization of Complex Architectures, 2007.

48. D. Gallup, J.-M. Frahm, **P. Mordohai**, Q. Yang and M. Pollefeys. *Real-time Plane-sweeping Stereo with Multiple Sweeping Directions.* IEEE Conference on Computer Vision and Pattern Recognition(CVPR), 2007. (acceptance rate: 27.5%)

49. E.S. Larsen, **P. Mordohai**, M. Pollefeys and H. Fuchs. *Simplified Belief Propagation for Multiple View Reconstruction.* Third International Symposium on 3-D Data Processing, Visualization and Transmission (3DPVT), 2006.

50. **P. Mordohai** and G. Medioni. *Unsupervised Dimensionality Estimation and Manifold Learning in high-dimensional Spaces by Tensor Voting.* International Joint Conference on Artificial Intelligence, pp. 798-803, 2005. (acceptance rate for oral presentations: 18.1%)

51. **P. Mordohai** and G. Medioni. *Dense Multiple View Stereo with General Camera Placement using Tensor Voting.* Second International Symposium on 3-D Data Processing, Visualization and Transmission (3DPVT), 2004.

52. **P. Mordohai** and G. Medioni. *Junction Inference and Classification for Figure Completion using Tensor Voting.* Workshop on Perceptual Organization in Computer Vision (POCV), 2004.

53. **P. Mordohai** and G. Medioni. *Stereo using Monocular Cues within the Tensor Voting Framework.* European Conference on Computer Vision (ECCV), Lecture Notes in Computer Science, vol. 3024,

pp 588-601, 2004. (acceptance rate for oral presentations: 7.4%)

54. **P. Mordohai** and G. Medioni. *Perceptual Grouping for Multiple View Stereo using Tensor Voting.* International Conference on Pattern Recognition (ICPR), vol. 3, pp. 639-644, 2002.

55. **P. Mordohai**, G. Medioni, and M.S. Lee. *Inference of Segmented Overlapping Surfaces from Binocular and Multiple-View Stereo.* Third Workshop on Perceptual Organization in Computer Vision (POCV), 2001.

Refereed Abstracts without Proceedings

1. **P. Mordohai**, A. Spyropoulos and K. Batsos. *Learning to Improve 3D Reconstruction* IEEE Applied Imagery Pattern Recognition workshop, 2017.

2. H. Li, **P. Mordohai.** and Gang Hua. *Attention-driven Egocentric Computer Vision for Robotic Wheelchair Navigation*, 4th Workshop on Egocentric (First-Person) Vision, 2016.

3. C. Freundlich, **P. Mordohai** and M. M. Zavlanos. *A Hybrid Control Approach to the Next-Best-View Problem using Stereo Vision.* International Workshop on Hybrid Systems: Computation and Control, Philadelphia, PA, 2013.

4. O. Dor, **P. Mordohai**, C.G. Sammis and Y. Ben-Zion. *Slip Surfaces in Fault Breccia From the Sierra Madre Fault Zone: Geometry and Mechanical Implications.* SECE, Proceedings and Abstracts, 2003.

5. **P. Mordohai**, O. Dor, J. Zechar, C.G. Sammis and Y. Ben-Zion. *Slip Surfaces in Fault Breccia From the Sierra Madre Fault Zone: Geometry and Mechanical Implications.* American Geophysical Union, EOS, 2003.

Book Chapters

1. **P. Mordohai** and G. Medioni. *Manifold Learning.* In *Encyclopedia of Biometrics,* Stan Z. Li (editor), Springer, 2009.

2. G. Medioni and **P. Mordohai**. *Saliency in Computer Vision.* In *Neurobiology of Attention,* L. Itti, G. Rees, and J. Tsotsos (editors), Elsevier Science, 2005.

3. G. Medioni, **P. Mordohai**, and M. Nicolescu. *The Tensor Voting Framework.* In *Handbook of Geometric Computing : Applications in Pattern Recognition, Computer Vision, Neural Computing, and Robotics,* E. Bayro-Corrochano (editor), Springer-Verlag, 2005.

4. G. Medioni and **P. Mordohai**. *The Tensor Voting Framework.* In *Emerging Topics in Computer Vision,* S.B. Kang and G. Medioni (editors), Prentice Hall, 2004.

Invited Conference and Workshop Proceedings

1. A. Akbarzadeh, J.-M. Frahm, **P. Mordohai**, B. Clipp, C. Engels, D. Gallup, P. Merrell, M. Phelps, S. Sinha, B. Talton, L. Wang, Q. Yang, H. Stewenius, R. Yang, G. Welch, H. Towles, D. Nistér and M. Pollefeys. *Towards Urban 3D Reconstruction From Video.* Third International Symposium on 3-D Data Processing, Visualization and Transmission (3DPVT), 2006.

Tutorials in International Conferences

1. M. Poggi, F. Tosi, F. Aleotti, K. Batsos, **P. Mordohai** and S. Mattoccia. *Facing depth estimation in-the-wild with deep networks.* Tutorial at the European Conference on Computer Vision, 2020
2. M. Poggi, F. Tosi, K. Batsos, **P. Mordohai** and S. Mattoccia. *Learning-based Depth Estimation from Stereo and Monocular Images: Successes, Limitations and Future Challenges.* Tutorial at the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2019
3. M. Poggi, F. Tosi, K. Batsos, **P. Mordohai** and S. Mattoccia. *Learning-based Depth Estimation from Stereo and Monocular Images: Successes, Limitations and Future Challenges.* Tutorial at the International Conference on 3D Vision (3DV), 2018
4. **P. Mordohai**. *Tensor Voting: A Perceptual Organization Approach for Computer Vision and Machine Learning.* Short Course at the IEEE Conference on Computer Vision and Pattern Recognition(CVPR), 2007

Patent

1. G. Medioni and **P. Mordohai**. *Tensor voting in N dimensional spaces.* United States Patent 7,953,675. Awarded, May 31, 2011.

Invited Lectures and Presentations

1. *Improving 3D Reconstruction by Combining Data-driven Supervision and Conventional Wisdom*, GRASP Special Seminar, University of Pennsylvania, hosted by Kostas Daniilidis, October 2020.
2. *Learning to Improve Stereo Matching*, Samsung AI Center, New York, hosted by Volkan Isler, August 2019.
3. *Learning to Improve Stereo Matching*, ICG Visual Computing Seminar, Graz University of Technology, hosted by Friedrich Fraundorder, October 2017.
4. *Improving Stereo Matching using Supervised Learning* (poster), International Workshop on Computer Vision, hosted by Gérard Medioni and Ramin Zabih, May 2016.
5. *Recent Developments in Computer Vision, Graphics and Robotics*, High Schools of the American Farm School, hosted by Katerina Diafa, Thessaloniki, Greece, December 2014.
6. *Leveraging Uncertainty Estimates to Improve 3D Reconstruction*, Department of Computer Science, Duke University, hosted by Carlo Tomasi, January 2014.
7. *Leveraging Uncertainty Estimates to Improve 3D Reconstruction*, Department of Computer Science, University of North Carolina, Chapel Hill, hosted by Jan-Michael Frahm, January 2014.
8. *The Roles of Uncertainty in 3D Reconstruction*, Department of Computer & Information Sciences, Temple University, hosted by Haibin Ling, February 2013.
9. *The Roles of Uncertainty in 3D Reconstruction*, GRASP Laboratory, University of Pennsylvania, hosted by Kostas Daniilidis, February 2013.

10. *Dynamic 3D Reconstruction, Uncertainty Estimation and Semantic 3D Mapping*, The Computer Science Colloquium, CUNY Graduate Center, hosted by Ioannis Stamos, February 2012.
11. *3D Computer Vision: beyond Static Modeling*, AT&T Labs Research, hosted by Dimitrios Dimitriadis, November 2011.
12. *Real-Time 3D Reconstruction and Range Data Analysis at Large Scales*, United Technologies Research Center, hosted by Isaac Cohen, November 2011.
13. *Stereo Vision: beyond Static 3D Modeling*, Informatics and Telematics Institute, Centre for Research and Technology, Hellas, hosted by Dimitrios Tzovaras, August 2011.
14. *Stereo Vision: beyond Static 3D Modeling*, Department of Computer Science, SUNY Stony Brook, hosted by Tamara Berg, October 2010.
15. *Real-Time Large-Scale 3D Reconstruction from Video*, Department of Nuclear Engineering, University of California at Berkeley, hosted by Lucian Mihailescu, June 2010.
16. *Measuring Uncertainty in Stereo Reconstruction* (poster), International Workshop on Computer Vision, hosted by Gérard Medioni, Gabriella Saniti di Baja and Ramin Zabih, May 2010.
17. *Real-Time 3D Reconstruction and Range Data Analysis at Large Scales*, iRobot Corporation, hosted by Christopher Geyer, May 2010.
18. *Object Detection in Large-Scale Range Datasets and Temporally Consistent 3D Reconstruction,* Sarnoff Corporation, hosted by Elena Dotsenko, June 2009.
19. *Temporally Consistent 3D Reconstruction from Video,* Perceptual Science Series, Rutgers University, Center for Cognitive Science, hosted by Peter Meer, March 2009.
20. *Structure from Data,* Computer Science Seminar, Stevens Institute of Technology, hosted by George Kamberov, March 2008.
21. *Three Tales of Reconstruction: Real-time, Accurate and Temporally Consistent,* Computer Vision seminar, University of Southern California, hosted by Gérard Medioni, October 2007.
22. *Stereo using Tensor Voting, Real-Time Urban Modeling and other Tales of Reconstruction,* GRASP Laboratory seminar, University of Pennsylvania, hosted by Kostas Daniilidis, May 2007.
23. *A Perceptual Organization Approach for Figure Completion, Binocular and Multiple-View Stereo and Machine Learning using Tensor Voting,* Image Lunch, University of North Carolina at Chapel Hill, hosted by Stephen Pizer, November 2005.
24. *Binocular and Multiple View Stereo using Tensor Voting,* at the Digital Technology Center, University of Minnesota, hosted by Stergios Roumeliotis, March 2005.
25. *The Tensor Voting Framework,* at the Computer Graphics and Immersive Technologies group, University of Southern California, hosted by Ulrich Neumann, June 2003.
26. *Multiple View Stereo using Tensor Voting,* at the Machine Vision Group, Jet Propulsion Laboratory, NASA, hosted by Larry Matthies, May 2002.

Teaching

- CS 382: Computer Architecture and Organization, Fall 2021.
- CS 677: Parallel Programming for Many-core Processors, Spring 2021.
- CS 383: Computer Organization and Programming, Fall 2020.
- CS 677: Parallel Programming for Many-core Processors, Spring 2020.
- CS 188: Seminar in Computer Science, Spring 2020.
- CS 383: Computer Organization and Programming, Fall 2019.
- CS 677: Parallel Programming for Many-core Processors, Spring 2019.
- CS 188: Seminar in Computer Science, Spring 2019.
- CS 392: System Programming, Fall 2018.
- CS 677: Parallel Programming for Many-core Processors, Spring 2017.
- CS 559: Machine Learning: Fundamentals and Applications, Fall 2016.
- CS 558: Computer Vision, Spring 2016.
- CS 559: Machine Learning: Fundamentals and Applications, Fall 2015.
- CS 532: 3D Computer Vision, Fall 2015.
- CS 677: Parallel Programming for Many-core Processors, Spring 2015.
- CS 284: Data Structures, Fall 2014.
- CS 559: Machine Learning: Fundamentals and Applications, Fall 2014.
- CS 677: Parallel Programming for Many-core Processors, Spring 2014.
- CS 532: 3D Computer Vision, Fall 2013.
- CS 284: Data Structures, Fall 2013.
- CS 677: Parallel Programming for Many-core Processors, Spring 2013.
- CS 284: Data Structures, Fall 2012.
- CS 559: Machine Learning: Fundamentals and Applications, Fall 2012.
- CS 284: Data Structures, Fall 2011.
- CS 559: Machine Learning: Fundamentals and Applications, Fall 2011.
- CS 677: Multicore Platforms for Cognitive Gaming and Simulation, Spring 2011.
- CS 559: Machine Learning: Fundamentals and Applications, Fall 2010.
- CS 559: Machine Learning: Fundamentals and Applications, Spring 2010.
- CS 537: Interactive Computer Graphics, Fall 2009.

- CS 559: Machine Learning: Fundamentals and Applications, Spring 2009.

Awards

- Top 10% of high-scoring reviewers, Conference on Neural Information Processing Systems (NeurIPS), 2020.
- Outstanding Reviewer award, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2018.
- Outstanding Reviewer award (1 of 130), IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2017.
- Outstanding Reviewer award (1 of 70), European Conference on Computer Vision (ECCV), 2016.
- Outstanding Reviewer award (1 of 44), IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2016.
- Outstanding Reviewer award (1 of 42), European Conference on Computer Vision (ECCV), 2014.
- Best Reviewer award (1 of 27), International Conference on Computer Vision (ICCV), 2013.
- Outstanding Reviewer award (1 of 40), European Conference on Computer Vision (ECCV), 2012.
- Outstanding Reviewer award (1 of 40), IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2012.
- Outstanding Reviewer award (1 of 25), International Conference on Computer Vision (ICCV), 2011.
- Best Reviewer award (1 of 51), IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2011.
- Outstanding Reviewer award (1 of 8), Asian Conference on Computer Vision (ACCV), 2010.
- Best Demo Award for *Real-Time Video-Based Reconstruction of Urban Environments* by J.-M. Frahm, A. Akbarzadeh, **P. Mordohai**, B. Clipp, C. Engels, D. Gallup, P. Merrell, C. Salmi, S. Sinha, B. Talton, L. Wang, Q. Yang, H. Stewénius, H. Towles, G. Welch, R. Yang, D. Nistér and M. Pollefeys at the IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Minneapolis, Minnesota, USA, June 2007.
- USC Integrated Media Systems Center Award for Excellence in Technology Demonstrations, 2003.
- National Scholarship Foundation of Greece (top 5 GPA in ECE Department), 1997 and 1998.
- Award of excellence in the Greek Mathematical Society Annual Student Contest, 1990, 1992 and 1993.

Research Supervision

Current Students

- Eric Joyce (Ph.D.), 2018-present

- Liyan Chen (Ph.D.), 2020-present
- Weihan Wang (Ph.D.), 2020-present
- Nathaniel Burgdorfer (Ph.D.), 2021-present

Alumni

- Yizhe Chang (postdoctoral researcher), 2016-2018
- Bo Sun (Ph.D), *Segmentation, Reconstruction and Recognition of Objects and Surfaces in 2D and 3D*, 2021
- Changjiang Cai (Ph.D), *Domain Generalization, Adaptive Filtering, and Multi-View Consistency in End-to-End Stereo Matching*, 2021
- Benjamin Abruzzo (Ph.D. Mech. Eng. co-advised with David Cappelleri), *Autonomy and Perception of Robotic Teams and Agents for Cooperative Localization and Threat Discrimination*, 2020
- Konstantinos Batsos (Ph.D.), *Learning-based Binocular and Multi-View Stereo Informed by Domain Expertise*, 2020
- Mohammed Kutbi (Ph.D.), *An Egocentric Computer Vision-based Robotic Wheelchair*, 2018
- Aristotle Spyropoulos (Ph.D.), *Supervised Learning for Stereoscopic Reconstruction*, 2017
- Iraklis Tsekourakis (Ph.D.), *Dynamic 3D Reconstruction*, 2016
- Xiaoyan Hu (Ph.D.), *Uncertainty based 3D Reconstruction*, 2013
- Liefei (Lucy) Xu (Ph.D. co-advised with H. Quynh Dinh), *Vector Field Analysis for Flow Pattern Detection and Video Analysis*, 2011
- Fahrettin Karakas (M.S.), 2020
- Nikolaos Agadakos (M.S.), 2018
- Andrew Wiggins (M.S.), 2017
- Chloe LeGendre (M.S.), 2015
- Max Ehrlich (M.S.), 2015
- Krzysztof Jordan (B.S.), 2015
- Lance Burgo (M.S.), 2013
- Yizhou Lin (M.S. co-advised with Gang Hua), 2013
- Qiuxia Han (M.S.), 2011
- Konstantinos Batsos (M.S.), 2011
- Morgan Baron (M.S. co-advised with George Kamberov), 2011
- Wei Jiang (M.S.), 2010

- Andrew Neurohr (B.S.), 2018

Past Visitors

- Hao Guo (Ph.D., visiting from the Department of Computer Science, College of Information and Electrical Engineering, China Agricultural University), 2013-2014
- Rafael Gouveia (B.S., exchange student from Centro de Informatica, Universidade Federal de Pernambuco, Brazil), 2014

M.S. Thesis Advisor

- Andrew Wiggins, *Classification of Guitar-Playing Techniques*, 2017
- Max Ehrlich, *Discriminative Hand Tracking from Depth Images*, 2015
- Dylan Hutchinson, *Modelwizard: Toward Interactive Model Construction*, reader with D. Naumann as advisor, 2015
- Wejdan Alomari, *STEMULI: Constructing a Good User Experience through a Practical Project that Aims to Improve STEM Education*, co-advised with G. Vesonder, 2014
- Ralph Mattiaccio, *Multi-Route Efficient Bus-Routing Algorithm*, co-advised with G. Kamberov, 2014.
- Shivom Raval, *Performance Analysis of Web Servers*, co-advised with Reza Peyrovian, 2009

B.S. Thesis Advisor

- Andrew Neurohr (B.S. with thesis), *Deep Learning Representations for Object Recognition in 3D Point Clouds*, 2018

Senior Design Team Advisor

- *Mobile Object Recognition*, Fall 2014-Spring 2015
- *DOE Solar Decathlon*, Fall 2012-Spring 2013

Undergraduate Independent Study or Research Supervisor

At Stevens, unless noted otherwise.

- Ryan Adoni, *Deep Learning for Autonomous Driving*, Summer 2021
- Hamzah Nizami, *Introduction to Machine Learning*, Summer 2020
- Vincent Lee, *The Statistics of Stereo Matching*, Fall 2019
- Nathaniel Burgdorfer, *The Statistics of Stereo Matching*, Summer 2019-Fall 2019
- Daniel Kramer, *The Statistics of Stereo Matching*, Summer 2019-Fall 2019
- Jason Tran, *The Statistics of Stereo Matching*, Summer 2019-Fall 2019

- Andrew Neurohr, *Point Cloud Segmentation and Classification*, Summer 2016-Summer 2017
- David Ovsiew, *Image Segmentation*, Summer 2016
- Jason Gardella, *Analysis of Bacterial Biofilms*, Summer 2015 and Spring 2016
- Ian Porada, *Learning the Statistics of Stereo Matching*, Summer 2015, Summer 2016 and Fall 2016
- Brian Zawisza, *Landing Zone and Object Detection in LIDAR Data*, Summer 2015
- Jacqueline Farzan, *Semantic Scene Segmentation*, Spring 2015
- Eric Fitzpatrick, *Road Detection using Vanishing Points*, Spring 2015
- Christopher Kelley, *Estimating Scene Layout from a Single Image*, Spring 2015
- Qing Zhao, *Multi-Robot Wireless Communication*, Summer 2014
- Michael Peleshenko, *Analysis and Segmentation of Point Clouds Collected by Consumer Depth Cameras*, Spring 2014
- Zach Klapwald, *Procedural Modeling*, Spring 2014
- Laura Cerrito, *DOE Solar Decathlon*, Summer 2013
- Brian Cesar-Tondreau,*Stereo Matching*, Summer 2013
- Jason Sarwar, *Stereo Matching*, Summer 2013 and Spring 2014
- Di Ren, *DOE Solar Decathlon*, Summer 2013
- Marcelo Acevedo, *DOE Solar Decathlon*, Spring-Summer 2013
- Matthew Milideo, *Stereo Matching*, Spring-Summer 2013
- Kevin Barresi, *App Development for the DOE Solar Decathlon*, Fall 2012-Spring 2013
- Brandon Ling, *App Development for the DOE Solar Decathlon*, Fall 2012-Spring 2013
- Daniel Ready, *Facial Expression Recognition*, Spring 2010
- Kirill Marants, *3D Modeling of the S.C. Williams Library*, Spring 2010
- Orie Steele, *The Music Chat-Bot*, Summer 2009, and *Augmented Social Cognition with Social Networks*, Spring 2012
- Brittany Brandon, *Object Detection in large-scale LIDAR Datasets*, UPenn, Summer 2008
- Zachary Bodnar, *Object Detection in large-scale LIDAR Datasets*, UPenn, Summer 2008
- Altan Alparslan, *3D Face Modeling*, USC, Fall 2004-Spring 2005
- Gurkan Gokul, *3D Face Modeling*, USC, Fall 2004-Spring 2005
- Lily Cheng, *Development and Evaluation of Stereo Correspondence Methods with emphasis on Multi-Resolution Methods and Face Modeling*, USC, Fall 2004-Summer 2005

- Ammar Chinoy, *Development and Evaluation of Stereo Correspondence Methods*, USC, Summer 2004

High School Student Mentor

- Two rising juniors, one from Brooklyn Technical High School (NY) and one from High Technology High School (NJ), July-August 2019
- Two rising juniors, one from Brooklyn Technical High School (NY) and one from Pine Crest School (FL), July - August 2016
- One rising senior from High Technology High School, July - August 2013
- Two seniors from Bergen County Academies, August 2011-June 2012
- One rising senior from Greece, June-July 2011

Ph.D. Dissertation Committee Member

All affiliations are with Stevens, unless noted otherwise.

- Yiding Yang, *Learning from Non-grid Data via Graph Convolutional Network*, 7/2021. Ph.D. Advisor: Xinchao Wang (CS).
- Fanfei Chen, *Deep Reinforcement Learning for Autonomous Robot Exploration Under Uncertainty*, 6/2021. Ph.D. Advisor : Brendan Englot (ME).
- Jiayan Qiu, *Learning for Data Association*, 8/2020. Ph.D. Advisor: Dacheng Tao (University of Sydney).
- Min Zheng, *Individualized Causal Model for Assisting Real World Decision Making*, 4/2019. Ph.D. Advisor: Samantha Kleinberg (CS).
- Ioannis Agadakos, *Improving Software Hardening by Disabling Unused Code in Dynamically Linked Applications*, 11/2018. Ph.D. Advisor: Georgios Portokalidis (CS).
- Hanyu Jiang, *GPU-based Parallel Algorithms with Architecture-Aware Optimization for Large-Scale Process Simulation of Biological Pathways and High-Throughput Homologous Sequence Search*, 10/2018. Ph.D. Advisors: Narayan Ganesan and Yu-Dong Yao (ECE).
- Shi Bai, *Learning-Aided Autonomous Exploration*, 4/2018. Ph.D. Advisor: Brendan Englot (ME).
- Matteo Poggi, *Machine Learning Techniques applied to Stereo Vision*, 12/2017. Ph.D. Advisor: Stefano Mattoccia (CSE, University of Bologna).
- Allan Zelener, *Object Localization, Segmentation, Classification, and Pose Estimation in 3D Images*, 6/2017. Ph.D. Advisor: Ioannis Stamos (CS, Hunter College, CUNY).
- Michael Engling, *Secure Pairing of Smart Mobile Devices via (Shared) Environmental Sensing*, 5/2017. Ph.D. Advisor: Antonio Nicolosi (CS).
- Charles Freundlich, *Decentralized State Estimation using Robotic Sensor Networks*, 12/2016. Ph.D. Advisor: Michael Zavlanos (ME, Duke University).

- Bartosz Luczynski, *Real-Time Tracking and Guided Mass Labeling of Low Resolution Data in Noisy Environments*, 6/2016. Ph.D. Advisor: George Kamberov (CS).
- Haoxiang Li, *Probabilistic Elastic Part Model for Face Processing*, 5/2016. Ph.D. Advisor: Gang Hua (CS).
- Qilin Zhang, *Robust Multimodal Collaborative Visual Recognition with Missing Data*, 5/2016. Ph.D. Advisor: Gang Hua (CS).
- Chengjiang Long, *Collaborative Gaussian Processes for Visual Recognition*, 10/2015. Ph.D. Advisor: Gang Hua (CS).
- Akin Tatoglu, *Modified Monocular SLAM with Concurrent Model Parameter Identification*, 4/2015. Ph.D. Advisor: Kishore Pochiraju (ME).
- Alexander Patterson IV, *Registration and Recognition in 3D*, 4/2014. Ph.D. Advisor: Kostas Daniilidis (CIS, University of Pennsylvania).
- Yiling Wang, *Efficient Techniques for High Resolution Stereo*, 1/2014. Ph.D. Advisor: Jan-Michael Frahm. (CS, University of North Carolina, Chapel Hill).
- Sam Friedman, *Discovering Regularity in Point Clouds of Urban Scenes*, 12/2013. Ph.D. Advisor: Ioannis Stamos (CS, Hunter College, CUNY).
- Matthew Burlick, *A Bottom-Up Approach to Video Representation and Ranked Matching Using Multi-Object Tracking and Automatic Unsupervised Atomic Unit Discovery on a Joint Appearance-Behavior Feature*, 9/2013. Ph.D. Advisor: George Kamberov (CS).
- Yafeng Yin, *Small Human Group Behavior Recognition*, 3/2013. Ph.D. Advisor: Hong Man (ECE).
- Jun Yin, *Computational Models for Human Behavior Recognition and Learning in Video Streams*, 4/2012. Ph.D. Advisor: Yan Meng (ECE).
- Viorel Dragnea, *Shape from Intensity Regions*, 5/2011. Ph.D. Advisor: George Kamberov (CS).
- Yuhua Zheng, *Object Recognition and Tracking using Bio-inspired Neural Computation and Swarm Intelligence*, 12/2010. Ph.D Advisor: Yan Meng (ECE).
- Theodoros Kamakaris, *Dynamic Spectrum Access in Cellular Networks*, 4/2010. Ph.D. Advisor: Yu-Dong Yao (ECE).
- E. Scott Larsen, *Temporal Multi-View Reconstruction Using Enhanced Belief Propagation*, Ph.D. Advisor: Henry Fuchs. (CS, University of North Carolina, Chapel Hill).

Engineer Degree Committee Member

- Hao Kang, *Design and Development Tools for the Experience Accelerator*, 2015
- Brent Cox, *Towards a Better Experience Accelerator*, 2014

Reader B.E. Thesis

- Kevin Doherty, *Learning-aided 3D Occupancy Mapping for Mobile Robots.* Advisor: Brendan Englot (ME), 2017

Service

- Associate Department Chair 2016-2017, 2018-2021
- Advisor in B.S. in CS program, 2018-present
- Director of M.S. in CS program, 2015-2017
- Director of M.S. in Media and Broadcast Engineering, 2015-present
- Member of Institute Undergraduate Promotions Committee, 2011-13
- Advisor in M.S. in CS program, 2018-present
- Advisor in M.S. in CS program, 2009-2017
- CS Department Seminar Coordinator, 1/2009-8/2011
- Member of CS Faculty Search Committee, 2010, 2011, 2012, 2013, 2015, 2016, 2017, 2019, 2020, 2021
- Member of CS Ph.D. Committee, 2010-present
- Member of CS IT Committee, 2010-2011

Professional Affiliations and Service

Associate Editor

- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2020-present
- Computer Vision and Image Understanding (CVIU), 2017-present
- Image and Vision Computing Journal (IVCJ), 2009-present
- Computer Vision and Image Understanding (CVIU): Special Issue on Large-Scale 3D Modeling of Urban Indoor or Outdoor Scenes from Images and Range Scans with Ioannis Stamos, Marc Pollefeys, Long Quan and Yasutaka Furukawa, 2015-2016

Conference and Workshop Organizer

- Program chair of the International Conference on Computer Vision (ICCV) 2025.
- Program chair of the International Conference on 3D Vision (3DV) 2019.
- Program chair of the International Workshop on Point Cloud Processing held with CVPR 2012.
- Program chair of the Vision and Graphics Computing for Multimedia Communications workshop held with ICME 2011.

- Chair of the Seventh Workshop on Perceptual Organization in Computer Vision held with CVPR 2010.
- Program chair for the Search in 3D and Video workshop held with ICCV 2009.
- Program chair for the Search in 3D workshop held with CVPR 2008.

Area Chair

- IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2021.
- European Conference on Computer Vision (ECCV), 2020.
- IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2020.
- IEEE/CVF International Conference on Computer Vision (ICCV), 2019.
- IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2019.
- International Conference on Pattern Recognition (ICPR), 2016.
- International Conference on Pattern Recognition (ICPR), 2014.
- IEEE Winter conference on Applications and Computer Vision (WACV), 2014.

Other Conference Service Activities

- Local Chair, CVPR 2022.
- Tutorial Chair, WACV 2022.
- Tutorial Chair, WACV 2021.
- Tutorial co-Chair, CVPR 2020.
- Doctoral Consortium co-Chair, CVPR 2014.
- Member of best paper award committee, International Conference on 3D Vision (3DV), 2013 and 2015.
- Doctoral Consortium Chair, CVPR 2013.
- Member of best paper award committee, 3DimPVT, 2012.
- Member of the best technical demonstration award committee, CVPR 2009.
- Arrangements chair for the Sixth Workshop on Perceptual Organization in Computer Vision held with CVPR 2008.
- Chair of local organization for the Third International Symposium on 3-D Data Processing, Visualization and Transmission, Chapel Hill, North Carolina, 2006.

Journal Reviewer

1. IEEE Transactions on Pattern Analysis and Machine Intelligence
2. IEEE Transactions on Image Processing

3. IEEE Transactions on Neural Networks
4. IEEE Transactions on Neural Networks and Learning Systems
5. IEEE Transactions on Robotics
6. IEEE Transactions on Circuits and Systems for Video Technology
7. IEEE Transactions on Knowledge and Data Engineering
8. IEEE Transactions on Visualization and Computer Graphics
9. IEEE Transactions on Systems, Man and Cybernetics – Part B
10. IEEE Journal of Selected Topics in Signal Processing
11. International Journal of Computer Vision (IJCV)
12. Computer Vision and Image Understanding Journal (CVIU)
13. Image and Vision Computing Journal (IVCJ)
14. Computer Graphics Forum
15. The Journal of Real-Time Image Processing
16. Machine Vision and Applications Journal (MVA)
17. Journal of Mathematical Imaging and Vision
18. Pattern Recognition Letters
19. Pattern Recognition
20. Robotics and Automation Letters
21. Robotics and Autonomous Systems
22. ISPRS Journal of Photogrammetry and Remote Sensing
23. Remote Sensing
24. Presence
25. EURASIP Journal of Image and Video Processing
26. The Visual Computer
27. Elsevier journal on Signal Processing
28. Elsevier journal on Computers & Geosciences
29. IEE Electronic Letters
30. International Journal of Digital Multimedia Broadcasting
31. The Journal of Visual Communication and Image Representation
32. IET Computer Vision
33. IPSJ Transactions on Computer Vision and Applications (CVA)

34. Encyclopedia of Image Processing
35. Biocybernetics and Biomedical Engineering

Conference Reviewer or Program Committee Member

1. IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2007, 2009-2018
2. IEEE/CVF International Conference on Computer Vision (ICCV), 2007-2017, 2021
3. European Conference on Computer Vision (ECCV), 2006-2018
4. International Conference on Robotics and Automation (ICRA), 2008-2013, 2016-2018, 2020-2021
5. IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2013, 2014, 2016, 2018-2021
6. Robotics Science and Systems (RSS), 2009
7. Neural Information Processing Systems (NeurIPS), 2020, 2021
8. International conference on Machine Learning (ICML), 2021
9. SIGGRAPH Asia, 2008, 2011
10. IEEE Winter conference on Applications of Computer Vision (WACV), 2012, 2013, 2015-2017
11. British Machine Vision Conference (BMVC), 2015, 2016
12. Asian Conference on Computer Vision (ACCV), 2007, 2009, 2010
13. International Conference on Pattern Recognition (ICPR), 2010, 2012
14. International Conference on 3D Vision (3DV), 2013-2018, 2021
15. 3DimPVT, 2012
16. International Symposium on 3D Data Processing, Visualization and Transmission (3DPVT), 2008
17. Workshop on Photogrammetric Computer Vision (PCV), 2019.
18. Workshop on 3D Reconstruction in the Wild, 2018
19. Reconstruction and Modeling of Large-Scale 3D Virtual Environments (RMLE), 2010
20. Virtual Representations and Modeling of Large-scale environments (VRML), 2007
21. 3DTV Conference, 2009-2012
22. American Control Conference (ACC), 2019
23. IEEE International Conference on Decision and Control (CDC), 2015
24. Mediterranean Conference on Control and Automation (MED), 2011
25. Workshop on Assistive Computer Vision and Robotics, 2018, 2020
26. Workshop on Perceptual Organization in Computer Vision (POCV), 2004, 2012
27. Multimodal Pervasive Video Analysis (MPVA), 2010

28. International Conference on Computer Vision Theory and Applications (VISAPP), 2010
29. International Conference on Image and Signal Processing (ICISP), 2010
30. Technical Demonstrations of ACM Multimedia, 2008
31. IEEE International Conference on Multimedia & Expo (ICME), 2008
32. ACM Symposium on Solid and Physical Modeling, 2007

Proposal Reviewer

- National Science Foundation (NSF) panelist, 2011, 2013, 2014, 2015, 2017, 2018, 2019, 2020.
- General Secretariat of Research and Technology (GSRT) of Greece, Aristeia II, 2013.
- University Research Board of the American University of Beirut, Lebanon, 2012.
- Natural Sciences and Engineering Research Council of Canada (NSERC), 2012 and 2014.
- New Researchers Start-up Program of Fonds québécois de la recherche sur la nature et les technologies (FQRNT), 2009.

Member of Professional Societies

- Interest Group on 3D Rendering, Processing and Communications of the IEEE Multimedia Communication Technical Committee, 2010-2012.
- IEEE, 2001-present