

**Philippos Mordohai**  
**Professor**  
**Department of Computer Science**  
**Stevens Institute of Technology**

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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
- Machine learning
- Robotic perception
- 3D shape representation and object recognition
- Perceptual organization

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Updated: May 2024

- 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

### Dissertation 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

### Journal Articles

1. E.C. Joyce, Y. Chen, E. Neeter and **P. Mordohai**. *SmallTAL: Real-Time Egocentric Online Temporal Action Localization for the Data-Impoverished*. PRESENCE: Virtual and Augmented Reality, 25 pages, 2024
2. M. Kutbi, H. Li, Y. Chang, B. Sun, X. Li, C. Cai, N. Agadacos, G. Hua and **P. Mordohai**. *Egocentric Computer Vision for Hands-Free Robotic Wheelchair Navigation*. Journal of Intelligent & Robotic Systems, Vol. 107, no. 1, 2023
3. B. Abruzzo, D.J. Cappelleri, and **P. Mordohai**. *Comparing Complementary Kalman Filters Against SLAM for Collaborative Localization of Heterogeneous Multirobot Teams*. Journal of Autonomous Vehicles and Systems, Vol. 2, no. 2, 2022
4. T. Mane, A. Bayramova, K. Daniilidis, **P. Mordohai**, and E. Bernardis. *Single-camera 3D Head Fitting for Mixed Reality Clinical Applications*. Computer Vision and Image Understanding, Vol. 218, 2022 (impact factor: 4.886)
5. M. Kutbi, Y. Chang, and **P. Mordohai**. *Inlier Clustering based on the Residuals of Random Hypotheses*. Pattern Recognition Letters, Vol. 150, pp. 101-107, 2021 (impact factor: 4.757)
6. 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: 24.314)
7. M. Kutbi, X. Du, Y. Chang, B. Sun, N. Agadacos, 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 (impact factor: 3.62)
8. 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)
9. 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)

10. 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)
11. 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)
12. **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)
13. 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)
14. 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. Stewénus, 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, 2008 (impact factor: 5.358)
15. **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, 2006 (impact factor: 4.31)
16. 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, 2004 (impact factor: 4.35)
17. 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, 2002 (impact factor: 2.92)

### Refereed Conference and Workshop Papers (with Proceedings)

1. W. Wang, C. Chou, G. Sevagamoorthy, K. Chen, Z. Chen, Z. Feng, Y. Xia, F. Cai, Y. Xu, **P. Mordohai**. *Stereo-NEC: Enhancing Stereo Visual-Inertial SLAM Initialization with Normal Epipolar Constraints*. IEEE International Conference on Robotics and Automation (ICRA), 2024
2. N. Burgdorfer and **P. Mordohai**. *V-FUSE: Volumetric Depth Map Fusion with Long-Range Constraints*. IEEE/CVF Conference on Computer Vision (ICCV), 2023
3. W. Wang, J. Li, Y. Ming and **P. Mordohai**. *EDI: ESKF-based Disjoint Initialization for Visual-Inertial SLAM Systems*. IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2023
4. L. Chen, W. Wang and **P. Mordohai**. *Learning the Distribution of Errors in Stereo Matching for Joint Disparity and Uncertainty Estimation*. IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2023
5. W. Wang, B. Joshi, N. Burgdorfer, K. Batsos, A. Quattrini Li, **P. Mordohai** and I. Rekleitis. *Real-Time Dense 3D Mapping of Underwater Environments*. IEEE International Conference on Robotics and Automation (ICRA), 2023

6. M. Roznere, **P. Mordohai**, I. Rekleitis and A. Quattrini Li. *3-D Reconstruction using Monocular Camera and Lights: Multi-view Photometric Stereo for Non-stationary Robots*. IEEE International Conference on Robotics and Automation (ICRA), 2023
7. B. Sun, J. Kuen, Z. Lin, **P. Mordohai** and S. Chen. *PRN: Panoptic Refinement Network*. IEEE/CVF Winter conference on Applications of Computer Vision, 2023
8. M. Xanthidis, B. Joshi, M. Roznere, N. Burgdorfer, W. Wang, A. Quattrini Li, **P. Mordohai**, S. Nelakuditi, and I. Rekleitis. *Mapping of Underwater Structures by a Team of Autonomous Underwater Vehicles*. International Symposium of Robotics Research (ISRR), 2022
9. B. Joshi, M. Xanthidis, M. Roznere, N. Burgdorfer, **P. Mordohai**, A. Quattrini Li, and I. Rekleitis. *Underwater Exploration and Mapping*. IEEE/OES Autonomous Underwater Vehicles Symposium (AUV), 2022
10. M. Xanthidis, B. Joshi, N. Karapetyan, M. Roznere, W. Wang, J. Johnson, A. Quattrini Li, J. Casana, **P. Mordohai**, S. Nelakuditi and I. Rekleitis. *Towards Multi-Robot Shipwreck Mapping*. First Advanced Marine Robotics TC Workshop: Active Perception, 2021
11. C. Cai and **P. Mordohai**. *Do End-to-end Stereo Algorithms Under-utilize Information?* International Conference on 3D Vision (3DV), 2020
12. C. Cai, M. Poggi, S. Mattoccia, and **P. Mordohai**. *Matching-space Stereo Networks for Cross-domain Generalization*. International Conference on 3D Vision (3DV), 2020
13. **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
14. 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
15. B. Sun and **P. Mordohai**. *Oriented Point Sampling for Plane Detection in Unorganized Point Clouds* IEEE International Conference on Robotics and Automation (ICRA), 2019
16. I. Tsekourakis and **P. Mordohai**. *Measuring the Effects of Temporal Coherence in Depth Estimation for Dynamic Scenes*. CVPR workshop on Photogrammetric Computer Vision workshop, 2019
17. 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), 2019
18. 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, 2019
19. 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%)

20. 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%)
21. 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
22. 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%)
23. Y. Chang, M. Kutbi, N. Agadacos, 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
24. 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
25. 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
26. M. Ehrlich and **P. Mordohai**. *Discriminative Hand Localization in Depth Images*. IEEE Symposium on 3D User Interfaces, 2016
27. R. Gouveia, A. Spyropoulos and **P. Mordohai**. *Confidence Estimation for Superpixel-based Stereo Matching*. International Conference on 3D Vision (3DV), 2015
28. A. Spyropoulos and **P. Mordohai**. *Ensemble Classifier for Combining Stereo Matching Algorithms*. International Conference on 3D Vision (3DV), 2015
29. I. Tsekourakis and **P. Mordohai**. *Consistent 3D Background Model Estimation from Multi-Viewpoint Videos*. International Conference on 3D Vision (3DV), 2015
30. 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%)
31. C. Freundlich, **P. Mordohai** and M. M. Zavlanos. *Optimal Path Planning and Resource Allocation for Active Target Localization*. American Control Conference, 2015
32. A. Zelener, **P. Mordohai** and I. Stamos. *Classification of Vehicle Parts in Unstructured 3D Point Clouds*, International Conference on 3D Vision (3DV), 2014
33. 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), 2014
34. L. Teran and **P. Mordohai**. *3D Interest Point Detection via Discriminative Learning*, 13th European Conference on Computer Vision (ECCV), 2014 (acceptance rate: 25.1%)
35. 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

36. 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%)
37. 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), 2013
38. 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), 2013 (acceptance rate for oral presentations: 17.5%)
39. 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), 2013 (acceptance rate: 25.5%)
40. X. Hu and **P. Mordohai**. *Least Commitment, Viewpoint-based, Multi-view Stereo*, 3DIMPVT, 2012
41. X. Hu and **P. Mordohai**. *Robust Probabilistic Occupancy Grid Estimation from Positive and Negative Distance Fields*, 3DIMPVT, 2012
42. **P. Mordohai**. *On the Evaluation of Scene Flow Estimation*, Unsolved Problems in Optical Flow and Stereo Estimation workshop, 2012
43. 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
44. H.Q. Dinh, L. Xu, **P. Mordohai** and T. Ramsay. *Detecting Patterns in Vector Fields*. AIAA Aerospace Sciences Meeting, 2011
45. L. Xu and **P. Mordohai**. *Automatic Facial Expression Recognition using Bags of Motion Words*. British Machine Vision Conference (BMVC), 2010 (acceptance rate: 34%)
46. 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%)
47. 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%)
48. **P. Mordohai**. *The Self-Aware Matching Measure for Stereo*. International Conference on Computer Vision (ICCV), 2009 (acceptance rate: 23.2%)
49. 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
50. 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%)
51. 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%)

52. 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%)
53. 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%)
54. 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%)
55. 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
56. **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. Stewénus, 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
57. 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%)
58. 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
59. **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%)
60. **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
61. **P. Mordohai** and G. Medioni. *Junction Inference and Classification for Figure Completion using Tensor Voting*. Workshop on Perceptual Organization in Computer Vision (POCV), 2004
62. **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%)
63. **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
64. **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. T. Mane, A. Bayramova, K. Daniilidis, **P. Mordohai** and E. Bernardis. *Single-Camera 3D Head Fitting for Mixed Reality Clinical Applications*, Sixth Workshop on Computer Vision for AR/VR (CV4ARVR), 2022
2. M. Roznere, **P. Mordohai** and A. Quattrini Li. *Towards Photometric Stereo for Non-stationary Underwater Robots: High-resolution Model Accuracy vs. Real-time Application*, ICRA Robotic Perception and Mapping: Emerging Techniques Workshop, 2022
3. **P. Mordohai**, A. Spyropoulos and K. Batsos. *Learning to Improve 3D Reconstruction* IEEE Applied Imagery Pattern Recognition workshop, 2017
4. H. Li, **P. Mordohai**. and G. Hua. *Attention-driven Egocentric Computer Vision for Robotic Wheelchair Navigation*, 4th Workshop on Egocentric (First-Person) Vision, 2016
5. 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
6. 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
7. **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*, University of Delaware SIGAI seminar, hosted by Xi Peng, September 2021
2. *Improving 3D Reconstruction by Combining Data-driven Supervision and Conventional Wisdom*, GRASP Special Seminar, University of Pennsylvania, hosted by Kostas Daniilidis, October 2020
3. *Learning to Improve Stereo Matching*, Samsung AI Center, New York, hosted by Volkan Isler, August 2019
4. *Learning to Improve Stereo Matching*, ICG Visual Computing Seminar, Graz University of Technology, hosted by Friedrich Fraundorfer, October 2017
5. *Improving Stereo Matching using Supervised Learning* (poster), International Workshop on Computer Vision, hosted by Gérard Medioni and Ramin Zabih, May 2016
6. *Recent Developments in Computer Vision, Graphics and Robotics*, High Schools of the American Farm School, hosted by Katerina Diafa, Thessaloniki, Greece, December 2014
7. *Leveraging Uncertainty Estimates to Improve 3D Reconstruction*, Department of Computer Science, Duke University, hosted by Carlo Tomasi, January 2014
8. *Leveraging Uncertainty Estimates to Improve 3D Reconstruction*, Department of Computer Science, University of North Carolina, Chapel Hill, hosted by Jan-Michael Frahm, January 2014
9. *The Roles of Uncertainty in 3D Reconstruction*, Department of Computer & Information Sciences, Temple University, hosted by Haibin Ling, February 2013

10. *The Roles of Uncertainty in 3D Reconstruction*, GRASP Laboratory, University of Pennsylvania, hosted by Kostas Daniilidis, February 2013
11. *Dynamic 3D Reconstruction, Uncertainty Estimation and Semantic 3D Mapping*, The Computer Science Colloquium, CUNY Graduate Center, hosted by Ioannis Stamos, February 2012
12. *3D Computer Vision: beyond Static Modeling*, AT&T Labs Research, hosted by Dimitrios Dimitriadis, November 2011
13. *Real-Time 3D Reconstruction and Range Data Analysis at Large Scales*, United Technologies Research Center, hosted by Isaac Cohen, November 2011
14. *Stereo Vision: beyond Static 3D Modeling*, Informatics and Telematics Institute, Centre for Research and Technology, Hellas, hosted by Dimitrios Tzovaras, August 2011
15. *Stereo Vision: beyond Static 3D Modeling*, Department of Computer Science, SUNY Stony Brook, hosted by Tamara Berg, October 2010
16. *Real-Time Large-Scale 3D Reconstruction from Video*, Department of Nuclear Engineering, University of California at Berkeley, hosted by Lucian Mihailescu, June 2010
17. *Measuring Uncertainty in Stereo Reconstruction* (poster), International Workshop on Computer Vision, hosted by Gérard Medioni, Gabriella Saniti di Baja and Ramin Zabih, May 2010
18. *Real-Time 3D Reconstruction and Range Data Analysis at Large Scales*, iRobot Corporation, hosted by Christopher Geyer, May 2010
19. *Object Detection in Large-Scale Range Datasets and Temporally Consistent 3D Reconstruction*, Sarnoff Corporation, hosted by Elena Dotsenko, June 2009
20. *Temporally Consistent 3D Reconstruction from Video*, Perceptual Science Series, Rutgers University, Center for Cognitive Science, hosted by Peter Meer, March 2009
21. *Structure from Data*, Computer Science Seminar, Stevens Institute of Technology, hosted by George Kamberov, March 2008
22. *Three Tales of Reconstruction: Real-time, Accurate and Temporally Consistent*, Computer Vision seminar, University of Southern California, hosted by Gérard Medioni, October 2007
23. *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
24. *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
25. *Binocular and Multiple View Stereo using Tensor Voting*, at the Digital Technology Center, University of Minnesota, hosted by Stergios Roumeliotis, March 2005
26. *The Tensor Voting Framework*, at the Computer Graphics and Immersive Technologies group, University of Southern California, hosted by Ulrich Neumann, June 2003
27. *Multiple View Stereo using Tensor Voting*, at the Machine Vision Group, Jet Propulsion Laboratory, NASA, hosted by Larry Matthies, May 2002

## Teaching

- CS 188: Seminar in Computer Science, S'19 and S'20
- CS 284: Data Structures, F'11, F'12, F'13, and F'14
- CS 382: Computer Architecture and Organization, F'21, F'22, and F'23
- CS 383: Computer Organization and Programming, F'19, F'20
- CS 392: Systems Programming, F'18, S'22, S'23 and S'24
- CS 532: 3D Computer Vision, F'13 and F'15
- CS 537: Interactive Computer Graphics, F'09
- CS 558: Computer Vision, S'16
- CS 559: Machine Learning: Fundamentals and Applications, S'09, S'10, F'10, F'11, F'12, F'14, F'15 and F'16
- CS 677: Parallel Programming for Many-core Processors, S'11, S'13, S'14, S'15, S'16, S'17, S'19, S'20, S'21, S'22, S'23 and S'24

## Awards

- Outstanding Reviewer award, International Conference on Computer Vision (ICCV), 2021
- Top 10% of high-scoring reviewers, Conference on Neural Information Processing Systems (NeurIPS), 2020
- Associate Editor Award, Image and Vision Computing, 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. Stewénus, 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
- Weihang Wang (Ph.D.), 2020-present
- Nathaniel Burgdorfer (Ph.D.), 2021-present
- Harish Sathishchandra (Ph.D.), 2022-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
- Saeid Hosseinipoor (M.S.), 2022
- 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, *STEMULLI: 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.

- Gabriel Talbert Bunt, *Introduction to 3D Computer Vision and Neural Radiance Fields*, Spring 2024
- Amartya Kalra, *Introduction to 3D Computer Vision*, Spring 2024
- Nicholas Buckley, *Translation from LEG to ARM assembly*, Summer 2023
- Randy Krauss, *Neural Radiance Fields*, Summer 2022
- Ryan Adoni, *Deep Learning for Autonomous Driving and object Pose Estimation for Robotic Manipulation*, Summer 2021-Spring 2022
- 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 juniors from The Pingry School (NJ), September 2023 - June 2024
- Three students from New Jersey and Florida, June-August 2023
- Two seniors, one from Weehawken High School and one from Cliffside Park High School, December 2022 - June 2023
- Two rising seniors from High Technology High School, July-August 2022
- 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.

- Monika Roznere, *3-D Reconstruction for Underwater Robots with a Monocular Camera and Lights*, 5/2024. Ph.D. Advisor: Alberto Quattrini Li (CS, Dartmouth College).
- Shiwei Zeng, *Data-Efficiency and Robustness in Machine Learning*, 4/2024. Ph.D. Advisor: Jie Shen (CS).
- Jiayu Yang, *Towards Efficient, Accurate and Self-trained Multi-view Stereopsis*, 1/2024. Ph.D. Advisor: Miaomiao Liu (Australian National University).
- Bharat Joshi, *Robust Underwater State Estimation and Mapping*, 10/2023. Ph.D. Advisor: Ioannis Rekleitis (CSE, University of South Carolina).
- Mengjiao Zhang, *Privacy in Federated Learning*, 9/2023. Ph.D. Advisor: Jia Xu (CS).
- Yu Yu, *Robust Machine Learning*, 6/2023. Ph.D. Advisor: Jia Xu (CS).
- Zhixiang Min, *Data-driven Geometric Workflows for Camera Localization*, 5/2023. Ph.D. Advisor: Enrique Dunn (CS).
- Dov Neimand, *A Parallel Linear Active Set Method and a Generalization of Distance Domination*, 1/2023. Ph.D. Advisor: Serban Sabau (ECE).
- Mulin Yu, *Reconstruction et Correction de Modèles Urbains à l'Aide de Structures de Données Cinétiques*, 12/2022. Ph.D. Advisor: Florent Lafarge (INRIA Sophia Antipolis and Université Côte d'Azur).
- Xiangyu Xu, *Generalized Dynamic 3D Reconstruction*, 7/2022. Ph.D. Advisor: Enrique Dunn (CS).
- Mark Mirtchouk, *Eating Detection, Food Classification, and Variable Selection Using Machine Learning*, 4/2022. Ph.D. Advisor: Wendy Wang (CS).
- 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 Agadakis, *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

- Member of University Committee on Promotion and Tenure, 2022-present
- Member Working Group on SES/SSE Promotion and Tenure Guidelines, 2022
- Member of Institute Undergraduate Promotions Committee, 2011-13
- 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
- Advisor in M.S. in CS program, 2018-present
- Advisor in M.S. in CS program, 2009-2017
- Member of CS Faculty Search Committee, 2010, 2011, 2012, 2013, 2015, 2016, 2017, 2019, 2020, 2021, 2023, 2024
- Member of CS Ph.D. Committee, 2010-present
- Member of CS Strategic Planning Committee, 2023-2024
- Member of CS IT Committee, 2010-2011
- CS Department Seminar Coordinator, 1/2009-8/2011

## Professional Affiliations and Service

### Associate Editor

- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2020-present
- Computer Vision and Image Understanding (CVIU), 2017-2023
- Image and Vision Computing Journal (IVCJ), 2009-2022
- 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), 2027
- 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), 2019-2024
- European Conference on Computer Vision (ECCV), 2020, 2022 and 2024
- IEEE/CVF International Conference on Computer Vision (ICCV), 2019
- International Conference on Pattern Recognition (ICPR), 2014 and 2016
- IEEE Winter conference on Applications and Computer Vision (WACV), 2014, 2024
- International Conference on 3D Vision, 2024
- International Conference on Robotics and Automation (ICRA), 2024

### Other Conference Service Activities

- Local Chair, CVPR 2022
- Tutorial Chair, WACV 2021 and 2022
- 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**

- IEEE Transactions on Pattern Analysis and Machine Intelligence
- IEEE Transactions on Image Processing
- IEEE Transactions on Neural Networks
- IEEE Transactions on Neural Networks and Learning Systems
- IEEE Transactions on Robotics
- IEEE Transactions on Circuits and Systems for Video Technology
- IEEE Transactions on Knowledge and Data Engineering
- IEEE Transactions on Visualization and Computer Graphics
- IEEE Transactions on Systems, Man and Cybernetics – Part B
- IEEE Journal of Selected Topics in Signal Processing
- International Journal of Computer Vision (IJCV)
- Computer Vision and Image Understanding Journal (CVIU)
- Image and Vision Computing Journal (IVCJ)
- Computer Graphics Forum
- The Journal of Real-Time Image Processing
- Machine Vision and Applications Journal (MVA)
- Journal of Mathematical Imaging and Vision
- Pattern Recognition Letters
- Pattern Recognition
- Robotics and Automation Letters

- Robotics and Autonomous Systems
- ISPRS Journal of Photogrammetry and Remote Sensing
- Remote Sensing
- Presence
- EURASIP Journal of Image and Video Processing
- The Visual Computer
- Elsevier journal on Signal Processing
- Elsevier journal on Computers & Geosciences
- IEE Electronic Letters
- International Journal of Digital Multimedia Broadcasting
- The Journal of Visual Communication and Image Representation
- IET Computer Vision
- IPSJ Transactions on Computer Vision and Applications (CVA)
- Encyclopedia of Image Processing
- Biocybernetics and Biomedical Engineering

### **Conference Reviewer or Program Committee Member**

- IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2007, 2009-2018
- IEEE/CVF International Conference on Computer Vision (ICCV), 2007-2017, 2021
- European Conference on Computer Vision (ECCV), 2006-2018
- International Conference on Robotics and Automation (ICRA), 2008-2013, 2016-2018, 2020-2021, 2023
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2013, 2014, 2016, 2018-2023
- Robotics Science and Systems (RSS), 2009
- IEEE International Conference on Robot and Human Interactive Communication (RO-MAN), 2023
- Neural Information Processing Systems (NeurIPS), 2020-2023
- International Conference on Machine Learning (ICML), 2021-2023
- International Conference on Learning Representations (ICLR), 2022, 2023
- SIGGRAPH Asia, 2008, 2011
- IEEE Winter conference on Applications of Computer Vision (WACV), 2012, 2013, 2015-2017, 2022-2024

- British Machine Vision Conference (BMVC), 2015, 2016
- Asian Conference on Computer Vision (ACCV), 2007, 2009, 2010
- International Conference on Pattern Recognition (ICPR), 2010, 2012
- International Conference on 3D Vision (3DV), 2013-2018, 2021, 2022
- 3DimPVT, 2012
- International Symposium on 3D Data Processing, Visualization and Transmission (3DPVT), 2008
- Workshop on Urban Scene Modeling: Where Vision Meets Photogrammetry and Graphics, 2024
- Workshop on Photogrammetric Computer Vision (PCV), 2019
- Workshop on 3D Reconstruction in the Wild, 2018
- Reconstruction and Modeling of Large-Scale 3D Virtual Environments (RMLE), 2010
- Virtual Representations and Modeling of Large-scale environments (VRML), 2007
- 3DTV Conference, 2009-2012
- Machine Learning in Real Life workshop, 2020
- American Control Conference (ACC), 2019
- IEEE International Conference on Decision and Control (CDC), 2015
- Mediterranean Conference on Control and Automation (MED), 2011
- Workshop on Assistive Computer Vision and Robotics, 2018, 2020
- Workshop on Perceptual Organization in Computer Vision (POCV), 2004, 2012
- Multimodal Pervasive Video Analysis (MPVA), 2010
- International Conference on Computer Vision Theory and Applications (VISAPP), 2010
- International Conference on Image and Signal Processing (ICISP), 2010
- Technical Demonstrations of ACM Multimedia, 2008
- IEEE International Conference on Multimedia & Expo (ICME), 2008
- ACM Symposium on Solid and Physical Modeling, 2007

### Proposal Reviewer

- National Science Foundation (NSF) panelist, 2011, 2013, 2014, 2015, 2017, 2018, 2019, 2020, 2021, 2022
- 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