CURRICULUM VITAE
Ibrahim Volkan Isler

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Academic Rank

Professor of Computer Science, College of Natural Sciences
    Core Faculty, Texas Robotics
The University of Texas at Austin

Education

- **University of Pennsylvania**, Philadelphia, PA
  Ph.D. in Computer and Information Science, 2004
        Advisors: Kostas Daniilidis and Sampath Kannan
  M.S.E. in Computer and Information Science, 2000

- **Boğaziçi University**, İstanbul, Turkey
  B.S. in Computer Engineering, 1999

Academic Employment

- The University of Texas at Austin, Department of Computer Science
  Professor (2025 –) Core Faculty Member of Texas Robotics

- University of Minnesota, Department of Computer Science & Engineering
  Professor (2017 – 2024), Associate Professor (2011 – 17), Assistant Professor (2008 – 11)
  Graduate Faculty Appointment in Electrical and Computer Engineering

- Rensselaer Polytechnic Institute, Department of Computer Science, Assistant Professor (2005 – 08)

- University of California, Berkeley, CITRIS, Post-doctoral Researcher (2004–05)

- University of Pennsylvania, GRASP Laboratory, Research Fellow (1999 – 2004)

Industry Experience

- **Samsung AI Center NY:** Head of Center (2021 – 2023); Perception Lead (2018-2021)

- **Farm Vision Technologies** Co-Founder and Board Member (2017-2023). Successful exit.

- **Consulting:** Over the years, I worked on a few select projects under NDAs. Some involved designing and implementing algorithms for specific problems; others were more high-level.

Research Interests

- Robotics: Field and Service Robotics (for environmental and infrastructure monitoring, agricultural and home automation); Networked Robotics; Algorithmic Foundations

- Computer Vision: 3D and Semantic Reconstruction; Active Sensing; Event Based Cameras

- Geometric Algorithms: Visibility and Network-aware Optimization

Membership in Professional Organizations

Current: The Institute for Electrical and Electronics Engineering (IEEE), Senior Member.
Former: ACM, SIAM, INFORMS, AAAI

Honors and Awards

University of Minnesota

- Informatics Institute Transdisciplinary Fellow, University of Minnesota   (2014-16)

- McKnight Land-Grant Professor, University of Minnesota (2010 – 2012)

- Resident Fellow, Institute on Environment, University of Minnesota (2009–2012)

- Doctoral Dissertation Fellowship: Narges Noori (2014-15), Josh Vander Hook (2014-15), Patrick Plonski (2016-17), Wenbo Dong (2019-2020)

- MnDrive Graduate Fellowship: Nikolaos Stefas (2018-2019), Nicolai Haeni (2019-2020)

External Sources

- Samsung Best Paper Award Competition, Bronze Medal, 2021

- Best Paper Award, IEEE International Symposium on VLSI, 2020

- CRA Outstanding Researcher Award Honorable Mention: Patrick Plonski (2010), Zhengqi Li (2015)

- Best paper finalist, 4th ACM/IEEE International Conference on Human-Robot Interaction (HRI 2009)

- National Science Foundation Faculty Early Career Development (CAREER) Award (2008)

Visiting Positions

- Samsung AI Research Center, NY (2018 – 2023)

- LAAS, CNRS, Toulouse, France (October 2015)
  Hosts: Simon Lacroix and Antonio Franchi

- Department of Electrical Engineering, Koc University, Istanbul, Turkey (April 2012).
  Host: Sinem Coleri Ergen

- Department of Computer Science, University of California, Santa Barbara (February 2012).
  Host: Subhash Suri

Selected Recent Invited Seminars

- 2024: Arizona State IDEAS Center; UMass Robotics Seminar, UFL IFAS Seminar

- 2023: UT Austin

- 2022: IA State Translational AI Center Seminar, UPenn GRASP Seminar, UMN Robotics Institute, Michigan State Robotics and Control Seminar, METU, Seoul National University

- 2021: Samsung AI Forum, Yale Robotics Seminar, CVPR Event-based Cameras Workshop

Contributions to Research

External Research Grants (Current and Pending)

1. Development of sentinel AI system technology for predicting and preemptively responding to threats in open crowded environments Korea Global Convergence Research Program. PI. Amount: $950K. Duration: 2024-2019.

2. Multi-Agent Reinforcement Learning for Onboard Vision-based Pursuit-Evasion. Honeywell Aerospace Seed Grant. Duration: 2025 Amount: $75K

External Research Grants (Completed)

- USDA ARS wheat stem rust detection (roughly $200K/year) 2021 - 2024

- IEEE Robotics and Automation Society Developing Countries Faculty Engagement Program. PI: Moctar Idrissa Moss, U. of Abdou Moumouni, Niger Amount: ≈20K. My role: Mentor. 2021-ongoing

- NRI: Dense 3D Reconstruction of Dynamic Actors in Natural Environments using Multiple Flying Cameras. Agency: NSF PI: HS Park. UMN Amount: $638,460.00 Period: 2020-23

- SHAPE: Strawberry Harvester for Tabletops in Polytunnels. Agency: Research Council of Norway. UMN Amount: $90K (approx) Period: 2020-2023

- Agricultural Weed Control Using Autonomous Mowers $750K (Phase I) + $900K (Phase II) Agency: MN LCCMR PI: Eric Buchanan (UMN WCROC)

- NSF S&AS: FND: Context-Aware Active Data Gathering for Complex Outdoor Environments Amount: $600K Period: 2019–2022, PI: Catherine Qi Zhao.

- NSF RI: Small: Network Formation for Multi-Robot Systems
  Role: Single PI. Amount $ 373K. Period: September 2016 - 2022

- Future Farm. Agency Research Council of Norway. Amount: $150K (approx) Period: 2018-2021

- Moose Calf Surveys and Monitoring: $348K Period: July 2017 – 19
  Agency: MN LCCMR. PI: Mark Ditmer

- USDA NRI Surveying and Servoing as Canonical Tasks to Enable Future Farms with Commercial Off-The-Shelf Robots
  Role: Lead PI. Amount: $914,565 (UMN Portion: $618,112). Period: September 2015 - 2018

- NSF NRI: Collaborative Research: Targeted Observation of Severe Local Storms Using Aerial Robots
  Role: UMN PI (lead PI: Eric Frew, U. Colorado). Amount: $1.9M (UMN Portion: $ 292K) Period: September 2015 - 2018

- NSF i-Corps, $50K, 2017.

- NSF SBIR subaward , $57K, 2017.

- Obstacle Avoidance and Coverage Planning, MnDrive Industry Collaboration Grant, 2017 ($50K internal + $50K Industry match)

- NSF NRI-EU Collaboration Supplement: $50K Period: June 2015 - 2016
  (with Simon Lacroix and Antonio Franchi from LAAS-CNRS, France).

- NRI: Small: Collaborative Research: Active Sensing for Robotic Cameramen
  Role: UMN PI (lead PI: Kostas Daniilidis, UPenn). Amount: $725K (UMN portion: $300K) Period: Sept 2013 – 2015+2 year NCE.

- NSF RI: Large: Collaborative Research: A Robotic Network for Locating and Removing Invasive Carp from Inland Lakes
  Role: Lead PI. Amount: $2.2M. (UMN portion $1.5M) Period: Sept 2011 – 2014 + 2 year NCE.

- CAREER: Mobility Control for Robotic Sensor Networks, NSF IIS-0745537. PI. Budget: $425,337 Period: 2009-2012.

    - REU Supplement. Budget: $16000. Period: Summer 2011.
    - REU Supplement. Budget: $8000. Period: Summer 2009.

- NSF/ARL Cloud Robotics Workshop. $45K. With Ani Hsieh. 2012.

- NETSE: Game Theoretic Coverage and Connectivity Services
  NSF, CCF-0916209. PI. Budget: $382,000 Period: September 2009-2012.

- I/UCRC for Safety, Security, and Rescue Research NSF, Industry/University Cooperation Research Center. Co-PI (PI: Papanikolopoulos). Budget: $338,715 Period: July 2008 - 2012

    - Supplement. Budget: $10000. Period: Summer 2011.
    - Supplement. Budget: $15000. Period: Summer 2012.

- Pursuit-Evasion Games with Complex Systems in Complex Environments.
  NSF CCF-0634823 (Theoretical Foundations Cluster). PI. Budget: $200,000. Period: 2006-2009.

    - REU Supplement. Budget: $16000. Period: Summer 2009.

- CRI: IAD: Research/Education Infrastructure Based on Modular Miniature Robot Teams. NSF CNS-0707939. PI. Budget: $350,000. Period: 2007-2011 (Collaborative Research between Rensselaer Polytechnic Institute and University of Minnesota)

    - REU Supplement. Budget: $16000. Period: Summer 2011.

Internal Research Grants

1. Real-Time Robotic Sensing and Manipulation for Fruit Picking, Norwegian Centennial Chair Research Grant, $ 150K, Period: 2014-16 PI: Isler

2. University of Minnesota Informatics Institute Fellowship ($75K + acad. year salary), 2014

3. Building Community-based Bioeconomies: Advancing Production, Resource Conservation, and Rural Community Vitality. MnDrive Transdisciplinary Program. Budget: $500K. Period: 2014 - 2016. PI: Nick Jordan

4. A General Purpose Robotic Inspection System for Existing Apple Packing Lines, MnDrive Program, $40K. PI. Co-PIs: Jim Luby, Cindy Tong, UMN. 2014.

5. Instructional Technology Award (Humanoids for the Robotics Teaching Lab). With Maria Gini. Approx. $50K. Year: 2011.

6. McKnight Land-Grant Professorship, $70K + acad. year salary Period: July 2010 – 2012.

7. Insitute on Environment Fellowship. Budget: $60,000. Period: June 2009 – 2012.

Products

Companies

- Farm Vision Technologies (2017 – 2023) `https://farm-vision.com/`

Datasets

- Haeni, Nicolai; Roy, Pravakar; Isler, Volkan. (2019). MinneApple: A Benchmark Dataset for Apple Detection and Segmentation. Available on the Data Repository for the University of Minnesota, `https://doi.org/10.13020/8ecp-3r13`.
  Number of downloads from the initial posting in September 2019 to January 2020: 886; July 2020: 3284; Oct 2020: 4022; Sept 2021: 14188; Jan 2022: 15249, March 2022: 21678; Oct 2022: 34165, Jan 2023: 37416, Oct 2023: 42423

Books Edited

1. Algorithmic Foundations of Robotics XI, L. Akin, N. Amato, V. Isler, A. F. van der Stappen (eds.), Springer Tracts on Advanced Robotics (STAR 107), 2015.

2. Algorithmic Foundations of Robotics IX, D. Hsu, V. Isler, J.C. Latombe, and M. Lin (eds.), Springer Tracts on Advanced Robotics (STAR 68), 2010.

Publications

Google Scholar: `https://scholar.google.com/citations?user=Q5KT-hEAAAAJ&hl=en`
DBLP: `https://dblp.org/pid/42/3703.html`

Journal Publications

J59. Z. Wang, F. Cladera Ojeda, A. Bisulco, D. Lee, CJ Taylor, K. Daniilidis, M. Ani Hsieh, D.D. Lee, Volkan Isler, EV-Catcher: High Speed Object Catching Using Low-latency Event-based Neural Networks IEEE Robotics and Automation Letters, 2023

J58. P. Maini, B. Gonultas and V. Isler Online Coverage Planning for an Autonomous Weed Mowing Robot with Curvature Constraints, IEEE Robotics and Automation Letters, 2022

J57. X. Fan, D. Lee, L. Jackel, R. Howard, D. Lee, V. Isler Enabling Low-Cost Full Surface Tactile Skin for Human Robot Interaction, IEEE Robotics and Automation Letters, 2022

J56. M. Wei and V. Isler Predicting Energy Consumption of Ground Robots On Uneven Terrains, IEEE Robotics and Automation Letters, 2021 DOI: 10.1109/LRA.2021.3130630

J55. S. Engin and V. Isler Establishing Fault-Tolerant Connectivity of Mobile Robot Networks IEEE Transactions on Control of Network Systems, 8(2): 667-677, 2021

J54. W. Dong, P. Roy and V. Isler Ellipse R-CNN: Learning to Infer Elliptical Objects from Clustering and Occlusions IEEE Transactions on Image Processing, 2020.

J53. C. Peng and V. Isler Visual Coverage Path Planning for Urban Environments IEEE Robotics and Automation Letters, 2020 DOI: https://doi.org/10.1109/LRA.2020.3010745

J52. M. Wei and V. Isler, Building Energy-Cost Map from Aerial Images and Ground Robot Measurements with Semi-supervised Deep Learning. IEEE Robotics and Automation Letters, 2020 Digital Object Identifier: 10.1109/LRA.2020.3006797

J51. N Haeni, P Roy, V Isler MinneApple: A Benchmark Dataset for Apple Detection and Segmentation. IEEE Robotics and Automation Letters, 2020

J50. N. Stefas, P. Plonski*, and V. Isler, Approximation algorithms for tours of orientation-varying view cones, International Journal of Robotics Research, 2020, in press.

J49 L Berry, A Beveridge, J Butterfield, V Isler, Z Keller, A Shine, J Wang Line-of-Sight Pursuit in Monotone and Scallop Polygons International Journal of Computational Geometry & Applications 29 (04), 307-351

J48. N Haeni, P Roy, V Isler A Comparative Study of Fruit Detection and Counting Methods for Yield Mapping in Apple Orchards, Journal of Field Robotics, 2019. Available as arXiv preprint arXiv:1810.09499

J47. W Dong, P Roy, V Isler Semantic mapping for orchard environments by merging two-sides reconstructions of tree rows Journal of Field Robotics, 2019. Available as arXiv preprint arXiv:1809.00075

J46. D Ozsoyeller, A Beveridge, V Isler, Rendezvous in Planar Environments with Obstacles and Unknown Initial Distance Artificial Intelligence, 2019.

J45. P Roy, A Kislay, PA Plonski, J Luby, V Isler, Vision-based preharvest yield mapping for apple orchards Computers and Electronics in Agriculture 164, 2019

J44. Vision-based monitoring of orchards with UAVs N Stefas, H Bayram, V Isler Computers and Electronics in Agriculture 163, 104814, 2019

J43. Y Xiong, C Peng, L Grimstad, PJ From, V Isler Development and field evaluation of a strawberry harvesting robot with a cable-driven gripper Computers and Electronics in Agriculture 157, 392-402, 2019

J42. P. Plonski*, and V. Isler, Approximation Algorithms for Tours of Height-varying View Cones International Journal of Robotics Research, 2019.

J41. N. Noori*, and V. Isler, The Lion and Man Game on Polyhedral Surfaces with Obstacles, Theoretical Computer Science, 739(X):39–58, 2019.

J40. W. Dong*, and V. Isler, A Novel Method for the Extrinsic Calibration of a 2D Laser Rangefinder and a Camera, IEEE Sensors, 2018, in press.

J39. P. Plonski*, J. Vander Hook*, C. Peng*, N. Noori*and V. Isler. Environment Exploration in Sensing Automation for Habitat Monitoring, *IEEE Transactions on Automation Science and Engineering*, 14(1):25–38, 2017.

J38. P. Tokekar*, J. Vander Hook*, D. Mulla, and V. Isler. Sensor Planning for a Symbiotic UAV and UGV System for Precision Agriculture, *IEEE Transactions on Robotics*, 2016, in press.

J37. P. Tokekar*and V. Isler.   Polygon Guarding with Orientation, *Computational Geometry: Theory and Applications*, 2016, in press.

J36. N. Noori*, A. Beveridge and V. Isler. A Pursuit-Evasion Toolkit, *IEEE Robotics and Automation Magazine*, 2016, in press.

J35. N. Noori*, A. Renzaglia*, J. Vander Hook*and V. Isler. Constrained Probabilistic Search for a One-Dimensional Random Walker, *IEEE Transactions on Robotics*, 32(2):261–274, 2016.

J34. P. Plonski*, J. Vander Hook, and V. Isler, Environment and Solar Map Construction for Solar-Powered Mobile Systems, *IEEE Transactions on Robotics*, 32(1):70–82, 2016.

J33. U. Ruiz*and V. Isler. Capturing an Omnidirectional Evader in Convex Environments using a Differential Drive Robot *IEEE Robotics and Automation Letters*, 1(16):1007–1013, 2016 .

J32. H. Bayram*, J. Vander Hook*and V. Isler.   Gathering Bearing Data for Target Localization, *IEEE Robotics and Automation Letters*, 1(1):369–374, 2016. Note: selected for presentation at ICRA 2016

J31. Z. Li*and V. Isler. Large Scale Image Mosaic Construction for Agricultural Applications, *IEEE Robotics and Automation Letters*, 1(1):70–82, 2016. Note: selected for presentation at ICRA 2016

J30. J. Vander Hook*, P. Tokekar*, and V. Isler. Algorithms for Cooperative Active Localization of Static Targets with Mobile Bearing Sensors under Communication Constraints, *IEEE Transactions on Robotics*, 31(4):864 − 876, 2015.

J29. B. Ames, A. Beveridge, R. Carlson, C. Djang, V. Isler, S. Ragain, and M. Savage, A Leapfrog Strategy for Pursuit-Evasion in a Polygonal Environment, *International Journal of Computational Geometry and Applications*, 25(2): 77-100, 2015. **Note:** The authors are undergraduate students from an IMA Summer REU program led by A. Beveridge

J28. P. Tokekar*, N. Karnad*and V. Isler. Energy-Optimal Velocity Profiles for Car-Like Robots, *Autonomous Robots*, 37(3):279–300, 2014.

J27. N. Noori*and V. Isler. Lion and Man Game with Visibility in Monotone Polygons, *The International Journal of Robotics Research*, 33(1): 155-181, 2014.

J26. J. Vander Hook*, P. Tokekar*and V. Isler. Cautious Greedy Strategy for Bearing-Only Active Localization: Analysis and Field Experiments, *Journal of Field Robotics*, 31(2):296-318, 2013.

J25. P. Tokekar*, E. Branson*, J. Vander Hook*and V. Isler. Coverage and Active Localization for Monitoring Invasive Fish with an Autonomous Boat *IEEE Robotics and Automation Magazine*, 20(3):33-41, September 2013.

J24. D. Ozsoyeller*, A. Beveridge, and V. Isler. Symmetric Rendezvous Search on the Line with an Unknown Initial Distance, *IEEE Transactions on Robotics*, 29(6):1366–1379, 2013.

J23. P. A. Plonski*and P. Tokekar*and V. Isler. Energy-efficient Path Planning for Solar-powered Mobile Robots, *Journal of Field Robotics*, 30(4):583-601, 2013.

J22. D. Bhadauria*, K. Klein, V. Isler and S. Suri. Capturing an Evader in Polygonal Environments with Obstacles: The Full Visibility Case, *The International Journal of Robotics Research*, 31(10): 1176–1189, September 2012.

J21. O. Tekdas*, D. Bhadauria*and V. Isler. Efficient Data Collection from Wireless Nodes under the Two-Ring Communication Model, *The International Journal of Robotics Research*, 28(3):288-404, 2012.

J20. O. Tekdas*, Y. Kumar, V. Isler and R. Janardan. Building a Communication Bridge with Mobile Hubs, *IEEE Transactions on Automation Science and Engineering*, 9(1):171–176, 2012.

J19. T. Chung, G. Hollinger, and V. Isler. Search and Pursuit-evasion in Mobile Robotics, *Autonomous Robots*, 31(4):299–316, 2011.

J18. D. Bhadauria*, O. Tekdas*, and V. Isler. Robotic Data Mules for Collecting Data over Sparse Sensor Fields, *Journal of Field Robotics*, 28(3):388-404, 2011.

J17. D. Bhadauria*, V. Isler, A. Studenski*, and P. Tokekar*. A Robotic Sensor Network for Monitoring Carp in Minnesota Lakes, *Journal of Field Robotics*, 27(6):779–789, 2010.

J16. O. Tekdas*and V. Isler. Sensor Placement for Triangulation Based Localization, *IEEE Transactions on Automation Science and Engineering*, 7(3):681–685, 2010.

J15. O. Tekdas*, W. Yang*and V. Isler. Robotic Routers: Algorithms and Implementation, *The International Journal of Robotics Research*, 29(1): 110 – 126, 2010.

J14. M. Pavone, N. Bisnik, E. Frazzoli, and V. Isler. A Stochastic and Dynamic Vehicle Routing Problem with Time Windows and Customer Impatience. *ACM/Springer Journal of Mobile Networks and Applications (MONET)*14(3): 350 – 364, 2009.

J13. O. Tekdas*, J. H. Lim, A. Terzis and V. Isler. Using Mobile Robots to Harvest Data from Sensor Fields, *IEEE Wireless Communications*, 16(3): 22 – 28, 2009.

J12. E. Meisner*, W. Yang*and V. Isler. Network Formation through Coverage and Freeze-Tag. *Intelligent Service Robotics*, Special Issue on Networked Robots, 2(4):265 – 275, 2009.

J11. V. Isler and N. Karnad*. The Role of Information in the Cops and Robbers Game. *Theoretical Computer Science*, 399(3): 179 – 190, 2008.

J10. E. Meisner*, V. Isler, and J. Trinkle. Controller Design for Human-Robot Interaction. *Autonomous Robots*, 24(2): 123 – 134, 2008.

J09. V. Isler and M. Magdon-Ismail. Sensor Selection in Arbitrary Dimensions. *IEEE Transactions on Automation Science and Engineering*, 5(4):651–660, 2008.

J08. N. Bisnik , A. Abouzeid and V. Isler. Stochastic Event Capture Using Mobile Sensors Subject to a Quality Metric. *IEEE Transactions on Robotics*, 23(4):676 – 692, 2007.

J07. V. Isler and R. Bajcsy. The Sensor Selection Problem for Bounded Uncertainty Sensing Models. *IEEE Transactions on Automation Science and Engineering*, 3(4):372 – 381, October 2006.

J06. V. Isler, S. Kannan, and S. Khanna. Randomized Pursuit-Evasion with Local Visibility. *SIAM Journal on Discrete Mathematics*, 20(1): 26 – 41, 2006.

J05. V. Isler, S. Kannan, and S. Khanna. Randomized Pursuit-Evasion in a Polygonal Environment. *IEEE Transactions on Robotics*, 21(5):875 – 885, 2005.

J04. V. Isler, S. Khanna, J. Spletzer, and C.J. Taylor. Target Tracking with Distributed Sensors: The Focus of Attention Problem. *Computer Vision and Image Understanding Journal*, 100(1-2):225–247, 2005.

J03. C. Belta, V. Isler, and G.J. Pappas. Discrete Abstractions for Robot Motion Planning and Control in Polygonal Environments, *IEEE Transactions on Robotics*, 21(5):864 – 875, 2005.

J02. V. Isler, S. Kannan, K. Daniilidis, and P. Valtr. VC-dimension of Exterior Visibility. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 26(5):667–671, 2004.

J01. J. Mulligan, V. Isler, and K. Daniilidis. Trinocular Stereo: A New Algorithm and its Evaluation. *International Journal for Computer Vision*, 47(1/2/3): 51–61, 2002.

Conference Proceedings (Refereed)

Notes: (1) The presenter is underlined. (2) RAL papers J58 – J56, J50, J32, and J31 listed above are also presented at ICRA, J59, J51, J52 at IROS and not repeated in this section.

125. FineControlNet: Fine-level Text Control for Image Generation with Spatially Aligned Text Control Injection Hongsuk Choi, Isaac Kasahara, Selim Engin, Moritz Alexander Graule, Nikhil Chavan-Dafle, Volkan Isler *IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)*, 2025.

124. Map-Aware Human Pose Prediction for Robot Follow-Ahead Q. Jiang, B. Susam, JJ. Chao, V. Isler *IEEE International Conference on Intelligent Robots and Systems* (IROS), 2024.

123. VioLA: Aligning Videos to 2D LiDAR Scans Jun-Jee Chao, Kazim Selim Engin, Nikhil Chavan-Dafle, Bhoram Lee, Volkan Isler *IEEE International Conference on Robotics and Automation* (ICRA), 2024.

122. RIC: Rotate-Inpaint-Complete for Generalizable Scene Reconstruction Isaac Kasahara, Shubham Agrawal, Kazim Selim Engin, Nikhil Chavan-Dafle, Shuran Song, Volkan Isler *IEEE International Conference on Robotics and Automation* (ICRA), 2024.

121. VFAS-Grasp: Closed Loop Grasping with Visual Feedback and Adaptive Sampling Pedro Piacenza, Jiacheng Yuan, Jinwook Huh, Volkan Isler *IEEE International Conference on Robotics and Automation* (ICRA), 2024.

120. HandNeRF: Learning to Reconstruct Hand-Object Interaction Scene from a Single RGB Image Hongsuk Choi, Nikhil Chavan-Dafle, Jiacheng Yuan, Volkan Isler, Hyun Soo Park *IEEE International Conference on Robotics and Automation* (ICRA), 2024.

119. GG-LLM: Geometrically Grounding Large Language Models for Zero-shot Human Activity Forecasting in Human-Aware Task Planning Moritz A. Graule, Volkan Isler *IEEE International Conference on Robotics and Automation* (ICRA), 2024.

118. HIO-SDF: Hierarchical Incremental Online Signed Distance Fields Vasileios Vasilopoulos*, Suveer Garg, Jinwook Huh, Bhoram Lee, Volkan Isler *IEEE International Conference on Robotics and Automation* (ICRA), 2024.

117. J. Yuan, C. Choi, E. Tadmor and V. Isler, Active Mass Distribution Estimation from Tactile Feedback *IEEE International Conference on Intelligent Robots and Systems* (IROS), 2023.

116. B. Gonultas, P. Mukherjee, O.G. Poyrazoglu and V. Isler, System Identification and Control of Front-Steered Ackermann Vehicles through Differentiable Physics *IEEE International Conference on Intelligent Robots and Systems* (IROS), 2023.

115. V. Vasilopouolos, S. Garg, P. Piecenza, J. Huh and V. Isler, RAMP: Hierarchical Reactive Motion Planning for Manipulation Tasks Using Implicit Signed Distance Functions *IEEE International Conference on Intelligent Robots and Systems* (IROS), 2023.

114. S. Agrawal, N. Chavan-Dafle, I. Kasahara, K.S. Engin, J. Huh and V. Isler, Simultaneous multi-object 3D shape reconstruction, 6DoF pose estimation and dense grasp prediction *IEEE International Conference on Intelligent Robots and Systems* (IROS), 2023.

113. A.K. Kosta, A. Burns, S. Rupavatharam, C. Escobedo, D. Lee, R. Howard, L. Jackel and V. Isler, AcouSkin: Full Surface Contact Localization using Acoustic Waves *IEEE International Conference on Intelligent Robots and Systems* (IROS), 2023.

112. S. Rupavatharam et al. AmbiSense: Acoustic Field Based Blindspot-Free Proximity Detection and Bearing Estimation *IEEE International Conference on Intelligent Robots and Systems* (IROS), 2023.

111. JJ Chao, N. Haeni, S. Engin and V. Isler, Category-Level Global Camera Pose Estimation with Multi-Hypothesis Point Cloud Correspondences *IEEE International Conference on Robotics and Automation* (ICRA), 2023.

110. C.Peng, M. Wei, and V. Isler, Stochastic Traveling Salesperson Problem with Neighborhoods for Object Detection *IEEE International Conference on Robotics and Automation* (ICRA), 2023.

109. S. Engin, V. Isler, Neural Optimal Control using Learned System Dynamics *IEEE International Conference on Robotics and Automation* (ICRA), 2023.

108. S. Rupavatharam*, C. Escobedo, D. Lee, C. Prepscius, L. Jackel, R. Howard, and V. Isler, SonicFinger: Pre-touch and contact detection tactile sensor for reactive pregrasping *IEEE International Conference on Robotics and Automation* (ICRA), 2023.

107. J. Hong, S. Garg, V. Isler, Semantic Mapping with Confidence Scores through Metric Embeddings and Gaussian Process Classification *IEEE International Conference on Robotics and Automation* (ICRA), 2023.

106. Z. He, N. Dafle, J. Huh, S. Song, V. Isler, Pick2Place: Task-aware 6DoF Grasp Estimation via Object-Centric Perspective Affordance *IEEE International Conference on Robotics and Automation* (ICRA), 2023.

105. N. Dafle, S. Popovich, S. Agrawal, D.D. Lee and V. Isler, Simultaneous Object Reconstruction and Grasp Prediction using a Camera-centric Object Shell Representation *IEEE International Conference on Intelligent Robots and Systems* (IROS), 2022.

104. J. Huh, J. Hong, S. Garg, HS Park, V. Isler, Self-supervised Wide Baseline Visual Servoing via 3D Equivariance *IEEE International Conference on Intelligent Robots and Systems* (IROS), 2022.

103. Z. Yang, X. Fan, V. Isler, HS Park, PoseKernelLifter: Metric Lifting of 3D Human Pose using Sound *IEEE Int. Conf. on Computer Vision and Pattern Recognition (CVPR)*, 2022.

102. J. Yuan, J. Hong, J. Sattar and V. Isler, ROW-SLAM: Under-Canopy Cornfield Semantic SLAM *IEEE International Conference on Robotics and Automation* (ICRA), 2022.

101. <u>A. Burns</u>, S. Xiang, D. Lee, L. Jackel, S. Song and V. Isler, Look and Listen: A Multi-Sensory Pouring Network and Dataset forGranular Media from Human Demonstrations *IEEE International Conference on Robotics and Automation* (ICRA), 2022.

100. <u>P. Piacenza</u>, D. Lee and V. Isler, Pouring by Feel: An Analysis of Tactile and Proprioceptive Sensing for Accurate Pouring *IEEE International Conference on Robotics and Automation* (ICRA), 2022.

99. <u>S. Engin</u>, Q. Jian and V. Isler, Learning to Play Pursuit-Evasion with Visibility Constraints

   IEEE International Conference on Intelligent Robots and Systems (IROS), 2021.

98. <u>J. Huh</u>, V. Isler, D.D. Lee Learning Continuous Cost-to-Go Functions for Non-holonomic Systems *IEEE International Conference on Intelligent Robots and Systems (IROS)*, 2021.

97. <u>J. Yuan</u>, N. Haeni, V. Isler Multi-Step Recurrent Q-Learning for Robotic Velcro Peeling, *IEEE International Conference on Robotics and Automation* (ICRA), 2021.

96. <u>J. Huh</u>, V. Isler, D.D. Lee Cost-to-Go Function Generating Networks for High Dimensional Motion Planning, *IEEE International Conference on Robotics and Automation* (ICRA), 2021.

95. <u>D. Yang</u>, T. Tosun, B. Eisner, V. Isler, D.D. Lee Robotic Grasping through Combined Image-Based Grasp Proposal and 3D Reconstruction, *IEEE International Conference on Robotics and Automation* (ICRA), 2021.

94. <u>A. Bisulco</u>, F. Cladera, V. Isler, D.D. Lee, Fast Motion Understanding with Spatiotemporal Neural Networks and Dynamic Vision Sensors, *IEEE International Conference on Robotics and Automation* (ICRA), 2021.

93. <u>M. Wei</u>, D. Lee, V. Isler, D.D. Lee, Occupancy Map Inpainting for Online Robot Navigation, *IEEE International Conference on Robotics and Automation* (ICRA), 2021.

92. <u>Z. Wang</u>, E. Mitchell, V. Isler and D. D. Lee Geodesic-HOF: 3D Reconstruction Without Cutting Corners *AAAI Conference on Artificial Intelligence*, 2021.

91. <u>J. Huh</u>, G. Xing, Z. Wang, V. Isler, D.D. Lee Learning to Generate Cost-to-Go Functions for Efficient Motion Planning *International Symposium on Experimental Robotics*, ISER, 2020.

90. <u>N. Haeni</u>, S. Engin, J.J. Chao, V. Isler CORN: Continuous Object Representation Networks for Novel View Synthesis, *NeurIPS*, 2020.

89. <u>D. R. Kepple</u>, D. Lee, C. Prepsius, V. Isler, I. M. Park, D. D. Lee Jointly learning visual motion and confidence from local patches in event cameras European Conference on Computer Vision (ECCV), 2020.

88. <u>S. Engin</u> and V. Isler Active Localization of Multiple Targets from Noisy Relative Measurements Workshop on Algorithmic Foundations of Robotics (WAFR), 2020

87. <u>A. Bisulco</u>, F. Cladera Ojeda, V. Isler and D. D. Lee Near-Chip Dynamic Vision Filtering for Low-Bandwidth Pedestrian Detection IEEE Computer Society Annual Symposium on VLSI (ISVLSI), 2020 **Best paper.**

86. <u>Z. Wang</u>, V. Isler and D. D. Lee Surface HOF: Surface Reconstruction from a Single Image Using Higher Order Function Networks IEEE International Conference on Image Processing (ICIP), 2020.

85. <u>F. Cladera Ojeda</u>, A. Bisulco, D. Kepple, V. Isler and D. D. Lee On-Device Event Filtering with Binary Neural Networks for Pedestrian Detection Using Neuromorphic Vision Sensors IEEE International Conference on Image Processing (ICIP), 2020.

84. <u>P. Maini</u> and V. Isler, Choosing Classification Thresholds for Mobile Robot Coverage, *IEEE International Conference on Intelligent Robots and Systems (IROS)*, 2020.

83. X. Fan, D. Lee, Y. Chen, C. Prepscius, V. Isler, L. Jackel, S. Seung, D. Lee, Acoustic Collision Detection and Localization for Robot Manipulators, *IEEE International Conference on Intelligent Robots and Systems (IROS)*, 2020.

82. E. Mitchell, S. Engin, V. Isler, D. D. Lee. Higher-Order Function Networks for Learning Composable 3D Object Representations, *International Conference on Learning Representations* (ICLR), 2020.

81. S. Engin, E. Mitchell, D. Lee, V. Isler, D. D. Lee. Higher Order Function Networks for View Planning and Multi-View Reconstruction, *IEEE International Conference on Robotics and Automation* (ICRA), 2020.

80. M. Wei and V. Isler Energy Efficient Path Planning for Ground Robots by Combining Air and Ground Measurements, *Conference on Robot Learning*, CORL 2019.

79. N. Stefas, H. Bayram and V. Isler. UAV Landing at an Unknown Location Marked by a Radio Beacon, *IEEE International Conference on Intelligent Robots and Systems (IROS)*, 2019.

78. T Tosun, E Mitchell, B Eisner, J Huh, B Lee, D Lee, V Isler, and HS Seung, Pixels to Plans: Learning Non-Prehensile Manipulation by Imitating a Planner, *IEEE International Conference on Intelligent Robots and Systems (IROS)*, 2019.

77. M. Wei and V. Isler Air To Ground Collaboration For Energy-efficient Path Planning For Ground Robots, *IEEE International Conference on Intelligent Robots and Systems (IROS)*, 2019.

76. A. Koval and V. Isler Turning a Corner with a Dubins Car, *IEEE International Conference on Robotics and Automation*, 2019. (Acceptance Ratio: 1277 papers out of 2900 submissions = 44%) Note: This work was done as part of Alan's NSF REU project at the end of his freshman year

75. C. Peng and V. Isler Adaptive View Planning for Aerial 3D Reconstruction, *IEEE International Conference on Robotics and Automation*, 2019. (Acceptance Ratio: 1277 papers out of 2900 submissions = 44%)

74. S. Engin and V. Isler Asynchronous Network Formation in Unknown Unbounded Environments, *IEEE International Conference on Robotics and Automation*, 2019. (Acceptance Ratio: 1277 papers out of 2900 submissions = 44%)

73. N. Haeni*, P. Roy and V. Isler. Apple Counting Using Convolutional Neural Networks *IEEE International Conference on Intelligent Robots and Systems (IROS)*, 2018. to appear.

72. H. Bayram*, N. Stefas and V. Isler. Aerial Radio-Based Telemetry for Tracking Wildlife *IEEE International Conference on Intelligent Robots and Systems (IROS)*, 2018. to appear.

71. P. Roy*, W. Dong and V. Isler. Registering Reconstructions of the Two Sides of Fruit Tree Rows *IEEE International Conference on Intelligent Robots and Systems (IROS)*, 2018. to appear.

70. C. Peng and V. Isler View Selection with Geometric Uncertainty Modeling, *Robotics: Science and Systems*, 2018.

69. S. Engin and V. Isler Minimizing movement to establish the connectivity of randomly deployed robots *International Conference on Automated Planning and Scheduling (ICAPS)*, 2018. (Acceptance Ratio: one of 57 long papers out of 209 submissions = 27%)

68. M. Wei and V. Isler A log-approximation for coverage path planning with energy constraint *International Conference on Automated Planning and Scheduling (ICAPS)*, 2018. (Acceptance Ratio: one of 57 long papers out of 209 submissions = 27%)

67. A. Quattrini Li, F. Amigoni, R. Fioratto and V. Isler Minimax Search Based Approach to Solve Pursuit-Evasion Games with Visibility in Polygonal Domains *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, 2018.

66. <u>M. Wei</u> and V. Isler Coverage Path Planning Under Energy Constraint *IEEE International Conference on Robotics and Automation*, 2018. (Acceptance Ratio: 1030 papers out of 2539 submissions = 41%)

65. <u>N. Stefas</u>, P. Plonski and V. Isler Approximation Algorithms for Tours of Orientation-varying View Cones *IEEE International Conference on Robotics and Automation*, 2018. (Acceptance Ratio: 1030 papers out of 2539 submissions = 41%)

64. Y. Xiong, P.J. From, and V. Isler Design and Evaluation of a Novel Cable-Driven Gripper with Perception *IEEE International Conference on Robotics and Automation*, 2018. (Acceptance Ratio: 1030 papers out of 2539 submissions = 41%)

63. H. Bayram, N. Stefas, S. Engin, and V. Isler Tracking Wildlife with Multiple UAVs: System Design, Safety and Field Experiments *1st International Symposium on Multi-Robot and Multi-Agent Systems*, 2017, to appear. : acceptance ratio: 24% for oral presentation

62. <u>P. Roy*</u>and V. Isler. Active View Planning for Counting Apples in Orchards *IEEE International Conference on Intelligent Robots and Systems (IROS)*, 2017. to appear.

61. <u>W. Dong*</u>and V. Isler. Linear Velocity from Commotion Motion *IEEE International Conference on Intelligent Robots and Systems (IROS)*, 2017. to appear.

60. <u>W. Dong*</u>and V. Isler. A Novel Method for the Extrinsic Calibration of a 2-D Laser-Rangefinder and a Camera *IEEE International Conference on Robotics and Automation*, 2017. (Acceptance Ratio: 933 papers out of 2278 submissions = 41%)

59. <u>P. Plonski*</u>, and V. Isler. Approximation Algorithms for Tours of Height-varying View Cones, 12th International Workshop on the Algorithmic Foundations of Robotics (WAFR), 2016. Note: as of now one of the 27 highest ranked papers (out of 110 submissions) accepted without conditions (25%)

58. <u>P. Roy*</u>and V. Isler.   Vision-based apple counting and yield estimation. *International Symposium on Experimental Robotics (ISER)*, 2016. to appear.

57. <u>N. Haeni*</u>and V. Isler. Visual Servoing in Orchard Settings *IEEE International Conference on Intelligent Robots and Systems (IROS)*, 2016. (Acceptance Ratio: 755 papers out of 1826 submissions = 41%)

56. <u>H. Bayram*</u>, K. Doddapaneni*, N. Stefas*, and V. Isler.   Active localization of VHF collared animals with aerial robots. *12th IEEE Conference on Automation Science and Engineering (CASE)*, 2016.

55. <u>P. Roy*</u>and V. Isler. Surveying apple orchards with a monocular vision system. *12th IEEE Conference on Automation Science and Engineering (CASE)*, 2016.

54. <u>C. Peng*</u>, P. Roy*, J. Luby, and V. Isler. Semantic mapping of orchards. *5th IFAC Conference on Sensing, Control and Automation for Agriculture (AGRICONTROL)*, 2016.

53. <u>N. Stefas*</u>, H. Bayram*and V. Isler. Vision-Based UAV Navigation in Orchards. *5th IFAC Conference on Sensing, Control and Automation for Agriculture (AGRICONTROL)*, 2016.

52. <u>P. Plonski*</u>, J. Vander Hook*, C. Peng*, N. Noori*, and V. Isler. Navigation Around an Unknown Obstacle for Autonomous Surface Vehicles Using a Forward-Facing Sonar *IEEE International Symposium on Safety, Security, and Rescue Robotics*, 2015.

51. V. Isler, N. Noori*, P. Plonski*, A. Renzaglia*, P. Tokekar*, and J. Vander Hook. Finding and Tracking Targets in the Wild: Algorithms and Field Deployments *IEEE International Symposium on Safety, Security, and Rescue Robotics*, 2015. Note: presented by Haluk Bayram

50. <u>N. Noori*</u>and V. Isler. The Lion and Man Game on Polyhedral Surfaces with Boundary *IEEE International Conference on Intelligent Robots and Systems (IROS)*, 2014. (Acceptance Ratio: 755 papers out of 1616 submissions = 47%)

49. <u>P. Tokekar</u>⋆, A. Franchi and V. Isler. Multi-Target Visual Tracking With Aerial Robots *IEEE International Conference on Intelligent Robots and Systems (IROS)*, 2014. (Acceptance Ratio: 755 papers out of 1616 submissions = 47%)

48. <u>N. Noori</u>⋆and V. Isler. The Lion and Man Game on Convex Terrains *The 12th Workshop on Algorithmic Foundations of Robotics (WAFR)*, 2014. (Acceptance Ratio: 42 papers out of 83 submissions = 50%)

47. <u>N. Noori</u>⋆, A. Renzaglia⋆and V. Isler. The Role of Target Modeling in Designing Search Strategies *IEEE International Conference on Intelligent Robots and Systems (IROS)*, 2014. (Acceptance Ratio: 755 papers out of 1616 submissions = 47%)

46. <u>P. Tokekar</u>⋆and V. Isler. Polygon Guarding with Orientation *IEEE International Conference on Robotics and Automation*, 2014. (Acceptance Ratio: 999 papers out of 2085 submissions = 48%)

45. <u>P. Plonski</u>⋆and V. Isler. A Competitive Online Algorithm for Exploring a Solar Map *IEEE International Conference on Robotics and Automation*, 2014. (Acceptance Ratio: 999 papers out of 2085 submissions = 48%)

44. <u>J. Vander Hook</u>⋆, and V. Isler. Pursuit and Evasion with Uncertain Bearing Measurements 26th Canadian Conference on Computational Geometry, 2014.

43. N. Noori⋆, A. Renzaglia⋆and <u>V. Isler</u>. Searching for a One-Dimensional Random Walker: Deterministic Strategies with a Time Budget When Crossing is Allowed *IEEE International Conference on Intelligent Robots and Systems (IROS)*, 2013. (Acceptance Ratio: 903 papers out of 2089 submissions = 43%)

42. A. Renzaglia⋆, N. Noori⋆and V. Isler. Searching for a One-Dimensional Random Walker: Randomized Strategy with Energy Budget *IEEE International Conference on Intelligent Robots and Systems (IROS)*, 2013. (Acceptance Ratio: 903 papers out of 2089 submissions = 43%)

41. <u>P. Tokekar</u>⋆, J. Vander Hook⋆, D. Mulla and V. Isler. Sensor Planning for a Symbiotic UAV and UGV system for Precision Agriculture *IEEE International Conference on Intelligent Robots and Systems (IROS)*, 2013. (Acceptance Ratio: 903 papers out of 2089 submissions = 43%)

40. <u>P. Tokekar</u>⋆and V. Isler. Sensor Placement and Selection for Bearing Sensors with Bounded Uncertainty. *IEEE International Conference on Robotics and Automation*, 2013. (Acceptance Ratio: 873 papers out of 2265 submissions = 38.5%)

39. <u>N. Noori</u>⋆, and V. Isler. The Lion and Man Game in Monotone Polygons, Tenth International Workshop on the Algorithmic Foundations of Robotics (WAFR), 2012.

38. <u>P. Plonski</u>⋆, P. Tokekar⋆and V. Isler. Energy-efficient Path Planning for Solar-powered Mobile Robots in Complex Environments, 13th International Symposium on Experimental Robotics, June 17-21, 2012.

37. <u>J. Vander Hook</u>⋆, P. Tokekar⋆, E. Branson⋆, P. Bajer, P. Sorensen, and V. Isler, Local-Search Strategy for Active Localization of Multiple Invasive Fish 13th International Symposium on Experimental Robotics, June 17-21, 2012.

36. <u>D. Ozsoyeller</u>⋆, V. Isler, A. Beveridge. Symmetric Rendezvous in Planar Environments. *Twenty-Sixth AAAI Conference on Artificial Intelligence (AAAI-12)*, 2012. (Acceptance Ratio: 294 papers out of 1129 submissions = 26%)

35. <u>J. Vander Hook</u>⋆, P. Tokekar, and V. Isler. Cautious Greedy Strategy for Bearing-Based Active Localization: Experiments and Theoretical Analysis. *IEEE International Conference on Robotics and Automation*, 2012. (Acceptance Ratio: 818 papers out of 2032 submissions = 40%)

34. <u>N. Karnad</u>⋆and V. Isler. Modeling Human Motion Patterns for Multi-Robot Planning. *IEEE International Conference on Robotics and Automation*, 2012. (Acceptance Ratio: 818 papers out of 2032 submissions = 40%)

33. P. Tokekar*, J. Vander Hook and V. Isler. Active Target Localization for Bearing Based Robotic Telemetry. *IEEE International Conference on Intelligent Robots and Systems (IROS)*, 2011. (Acceptance Ratio: 790 papers out of 2459 submissions = 32%)

32. D. Bhadauria*, and V. Isler. Capturing an Evader in a Polygonal Environment with Obstacles. *22nd International Joint Conference on Artificial Intelligence*, 2011. (Acceptance Ratio: 400 papers out of 1325 submissions = 30%)

31. P. Tokekar*, N. Karnad*, and V. Isler. Energy-Optimal Velocity Profiles for Car-Like Robots. *IEEE International Conference on Robotics and Automation*, 2011. (Acceptance Ratio: 982 papers out of 2004 submissions = 49%)

30. E. Stump, N. Michael, V. Kumar, and V. Isler. Visibility-Based Deployment of Robot Formations for Communication Maintenance. *IEEE International Conference on Robotics and Automation*, 2011. (Acceptance Ratio: 982 papers out of 2004 submissions = 49%)

29. D. Bhadauria*, V. Isler, A. Studenski*, and P. Tokekar*. A Robotic Sensor Network for Monitoring Carp in Minnesota Lakes. *IEEE International Conference on Robotics and Automation*, 2010. (Acceptance Ratio: 866 papers out of 2062 submissions = 42%)

28. N. Karnad*and V. Isler. A Multi-Robot System for Unconfined Video-Conferencing. *IEEE International Conference on Robotics and Automation*, 2010. (Acceptance Ratio: 866 papers out of 2062 submissions = 42%)

27. O. Tekdas*, P. Plonski*, N. Karnad*, and V. Isler. Maintaining Connectivity in Environments with Obstacles. *IEEE International Conference on Robotics and Automation*, 2010. (Acceptance Ratio: 866 papers out of 2062 submissions = 42%)

26. E. Meisner*, S. Das, V. Isler, J. Trinkle, S. Sabanovic, and L. Caporael. Predictive State Representations for Grounding Human-Robot Communication. *IEEE International Conference on Robotics and Automation*, 2010. (Acceptance Ratio: 866 papers out of 2062 submissions = 42%)

25. D. Bhadauria*and V. Isler. Data Gathering Tours for Mobile Robots. *IEEE International Conference on Intelligent Robots and Systems (IROS)*, 2009. (Acceptance Ratio: 936 papers out of 1599 submissions = 58%)

24. N. Karnad*and V. Isler. Lion and Man Game in the Presence of a Circular Obstacle. *IEEE International Conference on Intelligent Robots and Systems (IROS)*, 2009. (Acceptance Ratio: 936 papers out of 1599 submissions = 58%)

23. O. Tekdas*, N. Karnad*and Volkan Isler. Efficient Strategies for Collecting Data from Wireless Sensor Network Nodes using Mobile Robots. *14th International Symposium on Robotics Research (ISRR)*, 2009. (Acceptance Ratio: 24 papers out of 64 submissions = 37%)

22. O. Tekdas*, Y. Kumar, V. Isler and R. Janardan. Building a Communication Bridge with Mobile Hubs. *5th International Workshop on Algorithmic Aspects of Wireless Sensor Networks (ALGOSENSORS)*, 2009. (Acceptance Ratio: 21 papers out of 41 submissions = 51%)

21. E. Meisner*, S. Sabanovic , V. Isler, L. Capporael, and J. Trinkle. ShadowPlay: A Generative Model for Nonverbal Human-Robot Interaction. *ACM/IEEE International Conference on Human-Robot Interaction*, 2009. (Acceptance Ratio: 23 papers out of 120 submissions = 19%) **One of the five best paper finalists.**

20. E. Meisner*, W. Yang*, and V. Isler. Network Formation through Coverage and Freeze-Tag. Springer Tracts in Advanced Robotics. Selected Contributions of the Eighth International Workshop on the Algorithmic Foundations of Robotics, 2009.

19. N. Karnad*and V. Isler. Bearing-Only Pursuit. *IEEE International Conference on Robotics and Automation*, 2008. (Acceptance Ratio: 661 papers out of 1478 submissions = 45%)

18. O. Tekdas*and V. Isler. Robotic Routers. *IEEE International Conference on Robotics and Automation*, 2008. (Acceptance Ratio: 661 papers out of 1478 submissions = 45%)

17. M. Pavone, N. Bisnik, E. Frazzoli, and V. Isler Decentralized Vehicle Routing in a Stochastic and Dynamic Environment with Customer Impatience. *First International Conference on Robot Communication and Coordination (RoboComm)*, 2007. **Best Student Paper Finalist.** (Acceptance Ratio: one of the 42 papers chosen for oral presentation out of 90 submissions = 46% for oral. 73% for the conference)

16. O. Tekdas*and V. Isler. Sensor Placement Algorithms for Triangulation Based Localization. *IEEE International Conference on Robotics and Automation*, 2007. (Acceptance Ratio: 787 papers out of 1818 submissions = 44%)

15. S. Kamath*, E. M. Meisner*and V. Isler. Triangulation Based Multi Target Tracking with Mobile Sensor Networks. *IEEE International Conference on Robotics and Automation*, 2007. (Acceptance Ratio: 787 papers out of 1818 submissions = 44%)

14. N. Bisnik, A. Abouzeid and V. Isler. Stochastic Event Capture Using Mobile Sensors Subject to a Quality Metric. *The Annual International Conference on Mobile Computing and Networking (MOBICOM), 2006.* (Acceptance Ratio: 35 papers out of 298 submissions = 12%)

13. V. Isler. Placement and Distributed Deployment of Sensor Teams for Triangulation Based Localization. *IEEE International Conference on Robotics and Automation*, 2006. (Acceptance Ratio: 680 papers out of 1756 submissions = 39%)

12. V. Isler, B. Wilson, and R. Bajcsy Building a 3D Virtual Museum of Native American Baskets. *Third International Symposium on 3D Data Processing, Visualization and Transmission*, 2006. (Acceptance Ratio: 137 papers out of 202 submissions = 68%)

11. V. Isler and R. Bajcsy. The Sensor Selection Problem for Bounded Uncertainty Sensing Models. *The Fourth International Conference on Information Processing in Sensor Networks (IPSN'05)*, 2005. (Acceptance Ratio: one of the 19 papers chosen for oral presentation out of 213 submissions = 8% for oral. 20% for the conference)

10. A. Efros, V. Isler, J. Shi, and M. Visontai. Seeing Through Water. *Neural Information Processing Systems*, 2004. (Acceptance Ratio: 207 papers out of 823 submissions = 25%)

9. V. Isler, D. Sun, and S. Sastry. Roadmap-Based Pursuit-Evasion and Collision Avoidance. MIT Press. *Proceedings of Robotics: Science and Systems (RSS'05)*, 2005.

8. V. Isler, C. Belta, K. Daniilidis, and G.J. Pappas. Hybrid control for visibility-based pursuit-evasion games. *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2004. (Acceptance Ratio: 659 papers out of 1192 submissions = 55%)

7. V. Isler, K. Daniilidis, and S. Kannan. Sampling based sensor-network deployment. *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2004. (Acceptance Ratio: 659 papers out of 1192 submissions = 55%)

6. V. Isler, S. Kannan, and S. Khanna. Randomized pursuit-evasion with limited visibility. *ACM-SIAM Symposium on Discrete Algorithms*, 2004. (Acceptance Ratio: 135 papers out of 454 submissions = 30%)

5. V. Isler, S. Kannan, and S. Khanna. Locating and capturing an evader in a polygonal environment. Springer Tracts in Advanced Robotics. *Proceedings of the Sixth International Workshop on the Algorithmic Foundations of Robotics (WAFR'04)*, 2004.

4. V. Isler, J. Spletzer, S. Khanna, and C.J. Taylor. Target tracking with distributed sensors: The focus of attention problem. *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2003. (Acceptance Ratio: 60 %)

3. V. Isler, S. Kannan, and K. Daniilidis. Local Exploration: Online algorithms and probabilistic framework. *IEEE International Conference on Robotics and Automation*, 2003. (Acceptance Ratio: 714 papers out of 1176 submissions = 60%)

2. K. Daniilidis, C. Geyer, V. Isler, and A. Makadia. Omnidirectional sensing for robot control. Springer Tracts in Advanced Robotics. *Proceedings of Workshop on Control Problems in Robotics and Automation*, 2002.

1. J. Mulligan, V. Isler, and K. Daniilidis. Performance evaluation of stereo for tele-presence. *International Conference on Computer Vision*, 2001. (Acceptance Ratio: 205 papers out of 596 submissions = 34%)

Editorials and Expository Articles (Unrefereed, selected)

1. R Fitch, V Isler, P Tokekar, D Scaramuzza, Guest editorial: Special issue on active perception Autonomous Robots, 2018

2. V. Isler, B. Sadler, L. Preuchil and S. Nishio. Networked Robots, IEEE Robotics and Automation Magazine, 22(3):25 – 29, 2015.

3. N.Amato, H. L. Akin, N. M. Amato and V. Isler. Guest Editorial on the 11th Workshop on the Algorithmic Foundations of Robotics (WAFR 2014), *International Journal on Robotics Research*, 2016.

4. A.F. van der Stappen, H. L. Akin, N. M. Amato and V. Isler. Guest Editorial Special Section on the 11th Workshop on the Algorithmic Foundations of Robotics (WAFR 2014), *IEEE Transactions on Automation Science and Engineering*, 2016.

5. D. Hsu, V. Isler, J-C Latombe and M.C. Lin. Special Issue on the Ninth International Workshop on Algorithmic Foundations on Robotics (WAFR 2010), *International Journal on Robotics Research*, 31(2):127 – 128, 2012.

6. T. H. Chung, G. A. Hollinger and V. Isler. Guest editorial: Special Issue on Search and Pursuit-Evasion with Mobile Robots, *Autonomous Robots*, 31(4):297–298, 2011.

Patents

1. Method of predicting occupancy of unseen areas for path planning, associated device, and network training method Patent number: 11931900 Date of Patent: March 19, 2024

2. Dynamic vision filtering for event detection Patent number: 11871156 Date of Patent: January 9, 2024

3. Object mesh based on a depth image Publication number: 20230330873 Date of Patent: August 29, 2023

4. Acoustic collision detection and localization for robotic devices Patent number: 11714163 Date of Patent: August 1, 2023

5. Jointly learning visual motion and confidence from local patches in event cameras Patent number: 11694304 Date of Patent: July 4, 2023

6. Trajectory generation of a robot using a neural network Patent number: 11642787 Date of Patent: May 9, 2023

7. Method and apparatus for manipulating a tool to control in-grasp sliding of an object held by the tool Patent number: 11396103 Date of Patent: July 26, 2022

8. Method and apparatus for three-dimensional (3D) object and surface reconstruction Patent number: 11380061 Date of Patent: July 5, 2022

9. Method and apparatus for estimating tool trajectories Patent number: 11170526 Date of Patent: November 9, 2021

10. Higher-order function networks for learning composable three-dimensional (3D) object and operating method thereof Patent number: 11145114 Date of Patent: October 12, 2021

11. Semantic Structure from Motion for Orchard Reconstruction Application Filed: August 14, 2019, Publication date: February 20, 2020

12. Large Scale Image Mosaic Construction for Agricultural Applications Patent number: 10453178, Date of Patent: October 22, 2019

13. Robotic surveying of fruit plants Patent number: 9922261, Date of Patent: March 20, 2018

14. Symbiotic Unmanned Aerial Vehicle and Unmanned Ground Vehicle System. Patent number: 9464902, Date of Patent: October 11, 2016

Selected Colloquia and Other Invited Talks (2012-2021)

- Samsung AI Forum, October 2021

- Yale Robotics Colloquium, April 2021

- GRASP 40th Anniversary, University of Pennsylvania, October 2019

- Lockheed Martin Robotics Seminar, University of Maryland, April 2019

- IMA Workshop on Agricultural Data Integration: from Genomics to Unmanned Systems, October 2017

- Agricultural Robotics Symposium, NMBU, Norway, July 2017

- Computer Science Colloquium, Florida International University, January 2017

- Campbell Family Symposium, Washington State University, October 2016

- Robotics Institute, Carnegie Mellon University, November 2016

- PTC, Blaine, MN, October 2016

- Army Workshop on Heterogeneous Systems and Resiliency, August 2016

- Large Lakes Observatory Seminar, Duluth, March 2016

- Midwest Robotics Workshop, Chicago, March 2016

- INRIA, Rennes, France, January 2016

- IMA Data Science Seminar, Minneapolis, MN, November 2015

- USDA Phenotyping Workshop, Spokane, WA, November 2015

- Embedded Systems Conference, Minneapolis, MN, November 2015

- Robotics Seminar, LAAS-CNRS, Toulouse, France, October 2015

- Robotics Seminar, University of Southern California, January 2015

- Turkish Autonomous Robots Conference (TORK 2014) Plenary Talk, November 2014

- Iowa State, Mechanical Engineering Colloquium, October 2014

- Georgia Tech Research Institute, High Tech Agriculture Technical Seminar, October 2014

- University of Minnesota, ECE Colloquium, October 2014

- Sabanci University, Istanbul, Turkey. ME/CS Seminar, August 2014

- University of Maryland, Computer Science Robotics Seminar, July 2014

- University of Minnesota, Neuroscience Seminar, April, 2014

- University of Minnesota, Department of Computer Science Colloquium, February, 2014

- Social Robotics: Future Visions and Governance Workshop, Initiative on the Governance of Emerging Technological Systems (iGETs), University of Minnesota, April 2013

- GRASP Seminar, University of Pennsylvania, March, 2013

- Water Resources Seminar, University of Minnesota, March, 2013

- Conservation Biology Seminar, University of Minnesota, October, 2012

- The 2012 Symposium on Emerging Topics in Control and Modeling: Networked Systems, Coordinated Science Laboratory, University of Illinois, October 2012

- Aerospace Engineering Seminar, Stanford University, July 2012

- Navy Center for Applied Research in Artificial Intelligence Seminar Series, June 2012

- Aquatic Health Workshop, Malheur Wildlife Refuge, Bend, OR. March 2012.

- Bogazici University (Istanbul, Turkey). Computer Engineering Colloquium. April 2012.

- Koc University (Istanbul, Turkey). Electrical Engineering Colloquium. April 2012.

- AAAI 2012 Spring Symposium (AI, The Fundamental Social Aggregation Challenge, and the Autonomy of Hybrid Agent Groups), Stanford University, March 2012. (invited seminar)

- University of California, Santa Barbara. Computer Science Colloquium. February 2012.

Selected Colloquia and Other Invited Talks (Older)

- *Robotic Sensor Networks for Environmental Monitoring*, the Johns Hopkins University, IEEE Chapter Distinguished Speaker Series, November 2010.

- *Robotic Sensor Networks*, Saint Thomas University, Robotics Seminar, October 2010.

- *Robotic Tele-presence*, Built Relationships: Technology, Performance, Design and Architecture Seminar Series, Art of This Gallery, Minneapolis, May 2010.

- *Robotic Sensor Networks for Environmental Monitoring*, IBM T.J. Watson, UMN-Day speaker, Novermber 2009.

- *Sensing Limitations in Robotic Sensor Networks*, Robotics Seminar, University of Illinois, Urbana-Champaign, November 2009.

- *"Robotic Sensor Networks in Environmental Monitoring Tasks"*, Applied Mathematics Seminar, University of Minnesota, October 2009.

- *"The role of information in pursuit evasion: Graph theoretic models,"* Institute for Mathematics and Its Applications, University of Minnesota, New Directions Short Course: Applied Algebraic Topology, June 2009.

- *"Sensing Limitations in Robotic Sensor Network Tasks,"* University of Southern California, Computer Science Colloquium, June 2009.

- *"Robotic Data Mules for Environmental Monitoring,"* Large Lakes Observatory, University of Minnesota – Duluth, April 2009.

- *"Sensing Planning for Robotic Sensor Networks,"* University of Minnesota, Computer Science Colloquium, March 2008.

- *"Sensor Selection and Placement for Robotic Sensor Networks,"*

    - GRASP Special Seminar, University of Pennsylvania, February 2008.
    - PRISM Seminar Series, City College of New York, September 2007.
    - Center for Control, Dynamical Systems and Computation Seminar, University of California, Santa Barbara, July 2007.
    - Workshop on Robotic Sensor Networks (in conjunction with RSS'07), June 2007.
    - UMIACS Seminar, University of Maryland, October 2006.

- *"The Sensor Selection Problem for Bounded Uncertainty Sensing Models,"* in INFORMS 2006, Quality, Statistics and Reliability Cluster, November 2006.

- *"Algorithms for Distributed and Mobile Sensing,"* Industrial Engineering and Operations Research Seminar, University of California, Berkeley, June 2005.

- *"Pursuit-Evasion in Complex Environments: From Graphs to Polygons,"* in 1001st American Mathematical Society Meeting, Special Session on Mathematical Problems in Robotics, October 2004.

Contributions to Teaching

Classroom Teaching

At the University of Minnesota:

- CSci 5561: Computer Vision. Fall 2024. (Enrollment: ≈50)
- CSci 5561: Computer Vision. Fall 2023. (Enrollment: ≈50)
- CSci 5561: Computer Vision. Spring 2023. (Enrollment: ≈55)
- CSci 5552: Sensing and Estimation in Robotics, Spring 2021 (Enrollment: 67)
- CSci 8980: Perception and Action Planning for Robotics. Fall 2021. (Enrollment: 10)
- CSci 2011H: Honors Discrete Structures of Computer Science. Spring 2018. (Enrollment: 36)
- CSci 5552: Sensing and Estimation in Robotics, Spring 2018 (Enrollment: 46)
- CSci 2011H: Honors Discrete Structures of Computer Science. Spring 2017. (Enrollment: 20)
- CSci 5561: Computer Vision. Spring 2017. (Enrollment: ≈50)
- CSci 8980: Geometric Optimization in Robotics. Fall 2016. (Enrollment: 11)
- CSci 5561: Computer Vision. Spring 2015. (Enrollment: ≈50)
- CSci 2011: Discrete Structures of Computer Science. Fall 2014. (Enrollment: 215)
- CSci 5561: Computer Vision. Spring 2014. (Enrollment: ≈35)
- CSci 8980: Networked and Cloud Robotics. Spring 2013. (Enrollment: 12)
- CSci 5551: Introduction to Intelligent Robotic Systems. Fall 2012. (Enrollment: 28)
- CSci 5561: Computer Vision. Spring 2011. (Enrollment: 33)
- CSci 2011: Discrete Structures of Computer Science. Spring 2010. (Enrollment: 106)
- CSci 5551: Introduction to Intelligent Robotic Systems. Fall 2009. (Enrollment: 26)
- CSci 2011: Discrete Structures of Computer Science. Spring 2009. (Enrollment: 97)
- CSci 5980 : Robotic Sensor Networks. Fall 2008. (Enrollment: 12)

At Rensselaer Polytechnic Institute:

- CSCI 4150: Artificial Intelligence. Spring 2008.
- CSCI 6962 : Geometric Optimization for Robotics. Fall 2007
- CSCI 4260/MATH 4150: Graph Theory. Spring 2006, Spring 2007.
- CSCI 6962 : Reasoning About Uncertainty. Fall 2006.
- CSCI 4260/MATH 4150: Graph Theory. Spring 2007.
- CSCI 6966 : Optimization Methods for Distributed and Mobile Sensing. Fall 2005.

At the University of Pennsylvania:

- CSE 110: Introduction to Programming. Fall 2000, Spring 2001 (Teaching Assistant).

- CSE 320: Introduction to Algorithms. Spring 2003 (Teaching Assistant).

- CIS 502: Analysis of Algorithms. Spring 2002 (Grader).

- CSE 334: Advanced Topics in Algorithms. Fall 2003 (Grader).

Seminars Organized at UMN

- MnDrive Symposium 2017 (chair of the organizing committee)

- MnDrive Symposium 2016 (chair of the organizing committee)

- MnDrive Symposium 2014 (co-organizer)

- Computer Science Colloquium 2014 – 2015

- Computer Science Colloquium 2013 – 2014

- Digital Technology Center Science and Technology Innovator Series 2012 – 2013

- Digital Technology Center Science and Technology Innovator Series 2011 – 2012

Curriculum Development

- Robotics and Computer Vision curriculum revision

- Coordinated CSci 2011, CSci 4011 and CSci 4041 revision (2009 – 2010)

- Developed the curriculum for *Master's in Computer Science Specializing in Robotics*, 2006 (with Jeff Trinkle) (at Rensselaer Polytechnic Institute)

Advising

Ph.D. Alumni

14. Nicolai Haeni, Ph.D., 2023 (MagicLeap)
    Supervised and Unsupervised Methods for Vision-Based Object Detection, Counting and 3D Reconstruction

13. Selim Engin, Ph.D., 2022 (Sony Research)
    Multi-Robot Connectivity-Formation, Active Sensing and
    Control in Cooperative and Adversarial Settings

12. Minghan Wei, Ph.D., 2021 (Google, now Assistant Prof at Florida Atlantic University)
    Thesis: Energy Mapping and Energy-aware Path Planning for Field Robots

11. Cheng Peng, Ph.D. 2021 (Meta/FaceBook Research)
    Thesis: View Selection for Large Scale Reconstruction
    Note: thesis in final editing stage. Should be submitted in a week or so

10. Nikolaos Stefas, Ph.D. 2020 (Berkshire Gray)
    Environmental Monitoring with Unmanned Aerial Vehicles
    MnDrive Fellow (2019-20)

9. Wenbo Dong, Ph.D., 2020 (AI Lead at Target)
   3D Computer Vision Algorithms for Semantic Reconstruction of Agricultural Environments
   Doctoral Dissertation Fellowship winner (2019-20)

8. Patrick Plonski, Ph.D., 2019 (CEO, Farm Vision Technologies)
   Energy-aware Robotics for Environmental Monitoring
   Doctoral Dissertation Fellowship winner (2016-17)

7. Pravakar Roy, Ph.D. 2019 (Apple)
   Thesis: Computer Vision Algorithms for Yield Mapping in Specialty Farms

6. Narges Noori, Ph.D. 2016 (Google)
   Thesis: Adversarial and Stochastic Search for Mobile Targets in Complex Environments
   Doctoral Dissertation Fellowship winner (2014-15)

5. Josh Vander Hook, Ph.D. 2015 (Group Supervisor NASA JPL)
   Thesis: Active Target Localization and Tracking with Application to Environmental Monitoring
   Doctoral Dissertation Fellowship winner (2014-15)

4. Pratap Tokekar, Ph.D. 2014 (now Assistant Professor at University of Maryland)
   Thesis: Placement and Motion Planning Algorithms for Robotic Sensing Systems

3. Nikhil Karnad, Ph.D. 2015 (now at Google)
   Thesis: Robot Motion Planning for Tracking and Capturing Adversarial, Cooperative and Independent Targets

2. Onur Tekdas, Ph.D. 2011 (now at Google)
   Thesis: Improving Network Communication in Robotic Sensor Networks using Controlled Mobility

1. Eric Meisner, Ph.D. 2009 (Rensselaer) (now at Google)
   Thesis: Designing Controllers for Human-Robot Interaction

Ph.D. Advisees (current)

- Jiancheng Yuan (ABD)

- Qingyuan Jiang

- Burak Mert Gonultas

- Jun-Jee Chao

- Burak Susam

- Goktug Poyrazoglu

- Rahul Moorthy Mahesh

International Visitors

- Sarin Nhek (Norwegian University of Life Sciences) (December 2019)

- Ya (Bill) Xiong (Norwegian University of Life Sciences) (May – July 2017)

- Christophe Reymann (LAAS, INRIA, France) (August – Sept 2016)

- Nicolai Haeni (Zurich University of Applied Sciences, Switzerland) (Feb - August 2015)
  Nicolai's M.S. thesis work, performed and written in my lab, won the 2015 Best Master's Thesis Award from the Swiss Society for Automatic Control

- Alberto Quattrini Li (Milan Polytechnic, Italy) (Feb - August 2014)

- Deniz Ozsoyeller (Ege University, Turkey).
  Deniz spent two years at UMN (2011-2013) and completed her thesis under my supervision

Master's Advisees (Substantial Thesis or Project Work)

- Yukang Cao (Spring 2023 –)

- Rahul Moorthy Mahesh (2022; RA + Thesis work)

- Claire Chen (2022 – Spent the gap year as a visitor)

- Jun-Jee Chao (2021)

- Abhijeet Kislay (now at Bloomberg)

- Rudragouda Pharale (spring 2016 now at nVidia)

- Gabriel Oliveira. M.S. 2014. University of Minnesota

- Roman Ripp. M.S. 2014. University of Minnesota

- Deepak Bhadauria. M.S. 2010. University of Minnesota
  First position: Amazon.com. Now at Google.

- Ryan Lloyd. M.S. 2010. University of Minnesota
  First position: Ph.D. Student at the University of Minnesota

- Daa-Hey Woo. M.S. 2010. University of Minnesota
  First position: Software engineer in South Korea

- Nikhil Karnad. M.S. 2008. Rensselaer Polytechnic Institute
  First position: Ph.D. Student at the University of Minnesota

- Onur Tekdas. M.S. 2008. Rensselaer Polytechnic Institute
  2007 Founders Award of Excellence Recipient
  First position: Ph.D. Student at the University of Minnesota

- Wei Yang. M.S. 2008. Rensselaer Polytechnic Institute
  2008 The Jack Hollingsworth Prize Recipient
  First position: Bank of America

- Seema Kamath. M.S. 2007. Rensselaer Polytechnic Institute.
  First position: Microsoft

Post-doctoral Associates

- Pratik Mukherjee (July 2021 – 2023)
  now Assistant Professor at Florida Atlantic U.

- Parikshit Maini (Feb 2019 – 2022)
  now Assistant Professor at U. Nevada - Reno

- Dr. Haluk Bayram (October 2014 – Nov 2017)
  now Assistant Professor at MedU, Turkey

- Dr. Krishna Doddapaneni (January 2016 – December 2016) Amazon

- Dr. Ubaldo Ruiz Lopez (Sept 2013 – Sept 2014)
  now at CICESE, Mexico

- Dr. Alessandro Renzaglia (Sept 2012 – July 2014)
  now at LAAS, Toulouse, France

- Dr. Behcet Ugur Toreyin (January 2009 – January 2010)
  now Associate Professor at Istanbul Technical University

Visiting Scholars

- Prof. Pal Johan From, NMBU, Norway (May 2017)

- Dr. Kimberly Kendricks (May 2010 – July 2010)
  Dr. Kendricks is a faculty member at Central State University, OH. She spent her NSF HBCU-UP LDI Summer Research Appointment in my laboratory (Summer 2010).

Ph.D. Thesis Committee Member
Note: in recent years I started listing mostly non-cs, non-umn students

- Justin LeLoudec, University of Lincoln, UK (Advisor: Greg Cielniak)

- YuanYue Ge, NMBU, Norway (Advisor: Pal From)

- Yang Yang, University of Minnesota, ECE (Advisor: Chunghyun Choi)

- Frank Imeson, University of Waterloo (Advisor: Stephen Smith)

- Tim Patten, Australian Center for Field Robotics, University of Sydney (Advisor: Robert Fitch)

- Mark Gilbertson, Mechanical Engineering, University of Minnesota (Advisor: Tim Kowalewski)

- Michael Ludwig: Department of Computer Science, University of Minnesota (Advisor: Gary Meyer)

- Chao Guo: Department of Computer Science, University of Minnesota (Advisor: Stergios Roumeliotis)

- James Parker: Department of Computer Science, University of Minnesota (Advisor: Maria Gini)

- Mohit Sinha: Electrical & Computer Engr., University of Minnesota (Advisor: Sairaj Dhople)

- Ioana Bercea: Department of Computer Science, University of Maryland (Advisor: Samir Khuller)

- Antonio Petitti: Bari Polytechnic (Advisor: Alessandro Rizzo)

- Desheng Zhang: Department of Computer Science, University of Minnesota (Advisor: Tian He)

- Loren Fiore: Department of Computer Science, University of Minnesota (Advisor: Victoria Interrante)

- Lars Erickson: Department of Computer Science, University of Illinois, Urbana-Champaign (Advisor: Steve LaValle)

- Kyle Klein: Department of Computer Science, University of California, Santa Barbara (Advisor: Subhash Suri)

- Yanhua Li: Department of Computer Science, University of Minnesota (Advisor: Zhi-Li Zhang)

- Jon Andersh: Department of Computer Science, University of Minnesota (Advisor: Nikos Papanikolopoulos and Berenice Mettler)

- Anoop Cherian: Department of Computer Science, University of Minnesota (Advisor: Nikos Papanikolopoulos)

- Guoquan Huang: Department of Computer Science, University of Minnesota (Advisor: Stergios Roumeliotis)

- Duc Fehr: Department of Computer Science, University of Minnesota (Advisor: Nikos Papanikolopoulos)

- Joel Hesch: Department of Computer Science, University of Minnesota (Advisor: Stergios Roumeliotis)

- Guruprasad Somasundaram: Department of Computer Science, University of Minnesota (Advisor: Nikos Papanikolopoulos)

- Ting Zhu: Department of Computer Science, University of Minnesota (Advisor: Tian He)

- Brett Hemes: Department of Computer Science, University of Minnesota (Advisor: Nikos Papanikolopoulos)

- Xun (Sam) Zhou: Department of Computer Science, University of Minnesota (Advisor: Stergios Roumeliotis)

- Sarah Sharafkandi: Department of Computer Science, University of Minnesota (Advisor: David Du)

- Ethan Stump, Mechanical Engineering: University of Pennsylvania (Advisor: Vijay Kumar)

- Hyeun Jeong Min: Department of Computer Science, University of Minnesota (Advisor: Nikos Papanikolopoulos)

- Ziguo Zhong: Department of Computer Science, University of Minnesota (Advisor: Tian He)

- Jingqiao Zhang: Electrical, Computer and Systems Engineering, Rensselaer Polytechnic Institute (Advisor: Art Sanderson)

- Teruhiko Yoneyama: Information Technology, Rensselaer Polytechnic Institute (Advisor: Mukkai Krishnamoorthy)

- Nuzhet Atay: Computer Science, Washington University at St. Louis (Advisor: Burchan Bayazit)

- Xiaobo Long: Electrical, Computer and Systems Engineering, Rensselaer Polytechnic Institute (Advisor: Biplab Sikdar)

- Haiming Yang: Electrical, Computer and Systems Engineering, Rensselaer Polytechnic Institute (Advisor: Biplab Sikdar)

- Brad King: Computer Science, Rensselaer Polytechnic Institute (Advisor: Chuck Stewart)

- Matt Turek: Computer Science, Rensselaer Polytechnic Institute (Advisor: Daniel Freedman)

- Kris Beevers: Computer Science, Rensselaer Polytechnic Institute (Advisor: Wes Huang)

- Nabhendra Bisnik: Electrical, Computer and Systems Engineering, Rensselaer Polytechnic Institute (Advisor: Alhussain Abouzaid)

Undergraduate Research

- William Chastek (Spring 2024 –); Vision-based Fast Navigation Claire Chen (Fall 2021 – 2023 , 3D Semantic reconstruction of strawberry farms Ritik Mishra (Fall 2021 – Fall 2022, UAV control and planning), Claire Chen (Fall 2021 – Image segmentation and 3D reconstruction) Pranav Vijay (UCSD, Summer 2022) Barry Sly-Delgado (Summer 2020, GAN based view generation for VR), Dennis Melamed (Fall 2018 – Summer 2019; Now at CMU), Alan Koval (Summer, Fall 2018 – published an ICRA paper), Jackson Benning (Summer 2018), Abhi Kamboj (Summer 2018), Crystal Luo (Summer 2017 – ongoing, vision based orchard monitoring), Owen Levin (Summer 2017 – ongoing, network formation), Dennis Melamed (Summer 2016, Rendezvous search; 2017-18 UAV design and implementation), Yubo Shao (Spring, Summer 2016: Manipulator simulation), Aaron Mekonnen (Summer, Fall 2015, Summer 2016: Simulating obstacle avoidance algorithms), Zhengqi Li (Spring 2015: Image Mosaicing with Line Features **(CRA Outstanding Researcher Award Honorable Mention)**), Cheng Peng (Summer 2014: Obstacle Avoidance with Sonar), Ryan Webster (Summer 2014: Novel View Synthesis of Human Motion), Gabriella Kouneva (Summer 2013: Tracking with Directional Antenna), Husna Ibrahim

(Summer 2013: Mobility Models), Ian Ryan (Spring 2013: Human Following with Kinect), Kris von Ahnen (Spring 2013: Map Building and Path Planning), Alex Breyfogle (Summer 2012: Robotic Exploration and Map Building), Shuo Liu (AY 2011 – 2012: Computer Engineering senior honors project), Madison Macdonald (Fall'11 – Spring'12: Pursuit-Evasion), Elliot Branson (Summer'10 – Summer'12: Robotic Raft), Andy Schultz (Spring 2011 UROP; Spring 2012 CS Honors Project), Nicholas Kariniemi (AY 2010 – 2011: Computer Engineering senior honors project), Joseph Pipp (Summer'10: Robotic Tele-immersion), Shaun Gosse (Summer'10: Pursuit-Evasion), Patrick Plonski (Summer'09, Fall'09, Spring'10, Summer'10: Robotic Routers **(CRA Outstanding Researcher Award Honorable Mention)**), Andrew Studenski (Summer'09, Fall'09: Robotic Raft), Maxwell Collins (Spring'09: Localization using Wireless Signal Strength)

- At Rensselaer Polytechnic Institute: Brian Rowe (Spring'08), Ron DeMara (Fall'07, Spring'08), David Cerna (Summer'07, Fall'07), Wei Yang (Fall'06), Daniel Harrison (Fall'06)

Contributions to Service

Professional Contributions

Leadership Roles

- Chair: IEEE Robotics and Automation Society Technical Committee on Networked Robots (2009 – 2015)

- Networked robots area co-chair, IEEE International Conference on Advanced Robotics (ICAR 2015)

- Co-Chair: The 11th International Workshop on the Algorithmic Foundations of Robotics, 2014, Istanbul, Turkey

- Co-Organizer: NRI Workshop on Cloud Robotics (Sponsored by NSF and ARL), Philadelphia, PA. February 2013.

- Local Arrangements Chair: IEEE International Conference on Robotics and Automation, 2012.

- Senior Program Committee Member: IEEE International Conference on Robotics and Automation, 2012.

- Networked and Control Systems track co-chair. IEEE Conference on Automation Science and Engineering (CASE 2012)

- Program Co-Chair: The Ninth International Workshop on the Algorithmic Foundations of Robotics, 13-15 December 2010, Singapore

- Exhibit Chair: IEEE Conference on Automation Science and Engineering (CASE 2010)

- IROS 2008 Travel Awards Committee

- IEEE Conference on Automation Science and Engineering (CASE 2007), "Sensors, Instrumentation, and Measurement" track co-chair

- Workshop Co-Organizer:

  - *Scaling Up Active Perception* at ICRA 2015
  - *Many-Robot Systems* at ICRA 2012 and ICRA 2013
  - *Workshop on Robotics for Environmental Monitoring*, at RSS 2013, IROS 2012, RSS 2012, IROS 2011
  - *Educating Future Robotics Scientists and Engineers*, in conjunction with IEEE International Conference on Robotics and Automation, May 2011.
  - *Search and Pursuit/Evasion in the Physical World: Efficiency, Scalability, and Guarantees*, in conjunction with IEEE International Conference on Robotics and Automation, May 2010.
  - *Network Science and Systems Issues in Multi-Robot Autonomy*, in conjunction with IEEE International Conference on Robotics and Automation, May 2010.
  - *Robotic Wireless Sensor Networks*, in conjunction with IEEE/ACM Intl. Conference on Distributed Computing in Sensor Systems (DCOSS), June 2009.

- Conference session chair (not updated):

  - "Networked Robots" at IROS 2009
  - "Applications and Systems" at DCOSS 2009
  - "Connectivity Constrained Multi-Robot Systems" at ICRA 2008
  - "Path Planning" at ICRA 2006
  - "Robot Sensor Networks" at ICRA 2006

Editorial Boards

- Editor: IEEE ICRA Conference Editorial Board (2017 – 2019)

- Associate Editor: IEEE ICRA Conference Editorial Board (2007 – 2016, 2021–)

- Guest Editor: Autonomous Robots. Special issue on "Scaling Up Active Perception"

- Guest Editor: The International Journal on Robotics Research. Selected Contributions from WAFR 2014

- Associate Editor: IEEE Transactions on Robotics (2010 – 2014)

- Associate Editor: IEEE Transactions on Automation Science and Engineering (2009 – 2014)

- Guest Editor: The International Journal on Robotics Research. Selected Contributions from WAFR 2010

- Guest Editor: Autonomous Robots. Special Issue on Search and Pursuit-Evasion, 2010

- Guest Editor: Journal of Intelligent Service Robotics (JISR), special issue on networked robots, 2009

Program Committees

- WAFR 2024, NeurIPS 2024 (reviewer)

- ISER 2023

- IEEE International Conference on Robotics and Automation (ICRA 2006 – 2016; Editor 2016 – 2020)

- AAAI 2015, ICAR 2015, ACM SAC 2015, Turkish Autonomous Robots Conference 2014

- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2006 – 2012, 2013 (Video Editor), 2014 – 2016)

- The Tenth International Workshop on the Algorithmic Foundations of Robotics (2012)

- IEEE International Symposium on Safety, Security, and Rescue Robotics 2012

- IEEE Conference on Automation Science and Engineering (CASE 2008 – 2010, 2012)

- Annual ACM Symposium on Applied Computing (SAC 2011, 2012), ROBOT Track

- Robotics: Science and Systems (RSS 2006, 2008)

- Sensor-KDD 2009 (in conjunction with ACM SIGKDD)

- The 7th International Conference on Information Processing in Sensor Networks (IPSN 2008)

- Fall Workshop on Computational Geometry (2008)

- The 13th International Conference on Advanced Robotics (ICAR 2007),

Outreach and Community Service

- Mentoring Moctar Idrissa from Niger through the IEEE Robotics and Automation Society Developing Countries Faculty Engagement Program 2022

- Organized a 4 week summer robotics program for about 12 middle-schoolers, Summer 2017

- Problem Poser for the Summer Undergraduate Research Program of the Institute for Mathematics and Its Applications (IMA), University of Minnesota (Summer 2013)

- Problem Poser for the Summer Undergraduate Research Program of the Institute for Mathematics and Its Applications (IMA), University of Minnesota (Summer 2012)

- Exhibit at the Math & Science Family Fun Fair. University of Minnesota. November 19, 2011.

- Problem Poser for the Summer Undergraduate Research Program of the Institute for Mathematics and Its Applications (IMA), University of Minnesota (Summer 2010)

- provided demos for the Society of Automotive Engineers and accompanying high school students (hosted by Maria Gini)(January 2009)

- hosted Capital District middle school students' visits to RPI's robotics laboratory. In the largest visit, which took place on March 18th, 2008, 60 middle schoolers visited the lab

- Robotics Mentor for Columbia High School Science Project (2008)

Other Professional Service

- Best paper award committee (IROS 2021)

- Proposal Reviewer and Panelist for the National Science Foundation, French National Research Agency, European Commission, Hong Kong Research Committee, UK Research Council, Canadian Research Council.

- Rehabilitation (tenure) review for INRIA, France

- Panelist: NSF Workshop on Social Robotics, March 2007.

- Co-Organized 2007 New England Manipulation Symposium (NEMS'07) at RPI. Participants included faculty and graduate students from Brown, Columbia, Harvard, MIT, RIT, SUNBuffalo, UMass-Lowell, UMass-Amherst, Union, and Columbia High School as well as researchers from NASA Johnson Space Center and iRobot

- Co-Organized CS Day 2007 on robotics at RPI which featured seminars by Ron Fearing (Berkeley), Oussama Khatib (Stanford), Vijay Kumar (UPenn) and Daniela Rus (MIT)

- Reviewer (only journals listed):

  IEEE Transactions on Robotics; IEEE Transactions on Automation Science and Engineering; IEEE Transactions on Automatic Control; IEEE Transactions on Pattern Analysis and Machine Intelligence; IEEE Transactions on Systems, Man, and Cybernetics - Part B; IEEE Network; IEEE Wireless Communications; IEEE Sensors; IEEE/ACM Transactions on Networking; ACM Transactions on Algorithms; ACM Transactions on Sensor Networks; ACM Transactions on Multimedia Computing, Communications and Applications; SIAM Journal on Control and Optimization; The International Journal of Robotics Research; Autonomous Robots; Mathematics of Operations Research; Journal of Computer Vision and Image Understanding; Information Processing Letters; Wiley Wireless Communications and Mobile Computing; Journal of Artificial Intelligence Research; Ocean Engineering

University Service

- Board Member, The Institute for Advanced Studies, University of Minnesota (2016–19)

- Member, Council on Liberal Education, University of Minnesota (2013 – 14)

- Member, Council on Liberal Education, University of Minnesota (2012 – 13)

College Service

- MnRI Executive Committee, 2019 –

- MnDrive Robotics Advisory Committee, 2018

- MnDrive Proposal Reviewer, 2018

- Young Faculty Mock NSF panelist, 2018

- Shepherd Labs Renovation Committee, 2017

- Organizing committee chair, MnDrive RSAM Symposium 2017

- Shepherd Labs Renovation Committee, 2016

- Organizing committee chair, MnDrive RSAM Symposium 2016

- Various MnDrive Review Committees, University of Minnesota (2014 – 2015)

- Co-Organizer, MnDrive Kick-Off Event University of Minnesota (April 2014)

Departmental Service

2023 – 2024

- UTFEC chair

- Hiring committee chair

- Mentoring committee chair for Kang

- MnRI exec committee (also listed as college service)

2022 – 2023

- UTFEC member

- Mentoring committee chair for Kang

- MnRI exec committee (also listed as college service)

2021 – 2022

- MnDrive faculty search committee chair

- UTFEC member

- Presented tenure case

- Mentoring committee chair for Kang

- MnRI exec committee (also listed as college service)

2018 – 2021

- On leave.

2017 – 2018

- Chair, Untenured Faculty Evaluation Committee

- Strategic Planning Committee

- Hiring Committee

- Mentor Committee Chair for Sattar

2016 – 2017

- Advisory Committee

- Strategic Planning Committee

- Evaluation Committee

- Mentor Committee Chair for Sattar

2015 – 2016 (on fellowship leave)

- Faculty Recruiting Committee

- Shepherd Labs Renovation Committee

- Mentor Committee Chair for Sattar

2014-2015:

- Colloquium Chair

- Faculty Search Committee

2013-2014:

- Colloquium Chair

- Strategic Planning Committee

- Admissions Committee

- MnDrive Faculty Search Committee

2012-2013:

- Speaker, Bay Area Alumni Get-together, Mountain View, CA (July 2012)

- Member, Strategic planning committee

- Member, Curriculum committee

- Organizer, DTC Science & Techology Innovators Distinguished Speaker Series

2011-12 (I was on McKnight Leave):

- Member, Strategic planning committee (recruting)

- Organizer, DTC Science & Techology Innovators Distinguished Speaker Series

2010-11:

- Member, Strategic planning committee

- Member, Space committee

Other & previous years:

- DTC/CS Robotics mixer organizer (June 2009)

- Curriculum committee member: CSci 2011, 4041 revision (2009-2010)

- Graduate admissions committee member (2008-2009)

- WPE take-home exam committee member for computational geometry (January 2009), WPE in-class exam committee member for robotics (January 2009)

- Member of the Computer Engineering program (2008 -)

At Rensselaer Polytechnic Institute:

- Department of Computer Science colloquium series organizer (2007–2008)

- Computer Science Graduate Admissions Committee (2006-2007)

- Algorithms Qualifier Exam Committee (2007 - 2008)

- IT PhD Program Theory Qualifier Exam Committee (2007 - 2008)

Last Modified: January 24, 2025