Ashwin Dani

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Formal Education

PhD in Mechanical Engineering   2008 - 2011
University of Florida, Gainesville, FL

MS in Mechanical Engineering   2006 - 2008
University of Florida, Gainesville, FL

Bachelor of Engineering in Mechanical Engineering
College of Engineering Pune (CoEP), India   2001 - 2005

Professional Experience

- Consultant at GINIA Inc. (Oct 2020 – 2022) https://www.giniagroup.com

- Visiting Professor, *Indian Institute of Technology,* Delhi, India (Jan 2023-March 2023)

- Visiting Professor, *Indian Institute of Science,* Bangalore, India (April 2023-July 2023)

- Associate Professor with tenure (Aug 2019 – current)
  Electrical and Computer Engineering - *University of Connecticut, Storrs, CT*
  Affiliated Faculty: PW Institute of Advanced Systems Engineering (IASE)
  Affiliated Faculty: Management and Engineering for Manufacturing Program

- Assistant Professor (Aug 2013 – July 2019)
  Electrical and Computer Engineering - *University of Connecticut, Storrs, CT*
  Affiliated Faculty: UTC Institute of Advanced Systems Engineering (UTC-IASE)
  Affiliated Faculty: Management and Engineering for Manufacturing Program

- Post-Doctoral Research Associate (Aug 2011 – Aug 2013) Coordinated Science Lab,
  Department of Aerospace Engineering
  University of Illinois Urbana-Champaign, Urbana, IL

- Research and Teaching Assistant (Aug 2006-July 2011)
  Department of Mechanical and Aerospace Engineering – *University of Florida, Gainesville, FL*

- Research Intern (May 2010-Aug 2010) and (Jan 2009-May 2009)
  Mechatronics Group – *Mitsubishi Electric Research Labs, Cambridge, MA*

- Software Engineer (Oct 2005-July 2006)
  Software Consulting Division – *International Business Machines (IBM) India Pvt. Ltd., Bangalore, India*

Society Memberships
IEEE Senior Member
ASME Member

Editorial/Program Committee/Review Service

1. Associate Editor, IEEE Transactions on Automatic Control (Jan 2025-)
2. Associate Editor, IEEE CSS Conference Editorial Board (2015-current).
3. International Technical Program Committee member of International Conference on Control, Automation, Robotics and Vision (ICARCV), 2020, 2022, 2024.
4. IEEE Senior Member Application Review Panel, 2022, 2023.
5. Technical Editor (Associate Editor), IEEE Transactions on Mechatronics (Aug 2021-Aug 2023).
6. Guest Editor, research topic on "Safety in Collaborative Robotics and Autonomous Systems" in Frontiers of Robotics and AI (March 2021-July 2022).
7. Associate Editor, IEEE RAS Conference Editorial Board (2019-2020).
8. International Program Committee member of 7th Indian Controls Conference (ICC) 2021.
9. Program Committee member of 2020 International Symposium on Flexible Automation (ISFA), Chicago, IL.
10. Area Chair, Conference on Robot Learning - 2018 Edition, at Zurich, Switzerland.
11. Guest Editor for "Vision-based Control and its Applications" – Special issue in Journal of Applied Mathematics (Hindawi Publishing Corporation), 2014.

Technical Committee

1. Member, IEEE CSS Technical Committee on Intelligent Control (2017-present)
2. Member, IEEE CSS Technical Committee on Manufacturing Automation (2017-present)
3. Member, ASME DSCC Technical Committee on Bio-System and Healthcare Control (2018-2021)

Workshop/Invited Session/Session Chair

1. Session Chair, Time-delay systems, American Controls Conference 2024
2. Session Chair, "Estimation and Filtering II" and "Perception and Sensing" at IFAC World Congress, July 2023
3. Infusing Advanced Manufacturing in Engineering Education – National Materials and Manufacturing Board - National Academies of Engineering and Science, Feb 2022
4. Workshop presentation "The Confluence of Vision and Control", Conference on Control Technology and Applications, 2021
5. Session Chair, "Vision-based Control", IEEE ICRA 2021
6. Session Chair, "Autonomous Systems", IEEE Conference on Decision and Control, 2020
7. Workshop organizer (co-organized with Nicholas Gans) on "The Confluence of Vision and Control", American Controls Conference 2020, Denver, CO
8. Invited Session organizer (and session chair) with Nicholas Gans "Recent Advances in Adaptive and Intelligent Control", American Controls Conference 2019, Philadelphia, PA

9. Invited Session organizer (and session co-chair) with Nitin Sharma on "Estimation, Learning and Control in Human-Machine Systems" – IFAC Cyber Physical Human Systems (CPHS) Conference, 2018

10. Session Co-Chair "Kalman Filtering II", American Controls Conference, 2018

11. Workshop talk for "Complex Collaborative Systems: Closing the Loop, Learning, and Self-Confidence" at IEEE/RSJ International Conference on Intelligent Robots and Systems, Sept 2017

12. Session Co-Chair "Learning and Adaptation", IEEE Conference on Decision and Control (CDC), 2016

Professional Service – at UConn
1. UConn College of Engineering faculty committee on Artificial Intelligence (AI) (Fall 2024-)
2. UConn Office of Vice President for Research (OVPR) website committee (Fall 2024-)
3. Faculty member involved in creation of new Robotics Engineering UG degree program at UConn (2021-2022)
4. Faculty search Committee, Electrical and Computer Engineering (2021)
5. FIRST Robotics student organization mentoring at UConn (2015-present)
6. Lead coordinator for Electrical and Computer Engineering colloquium series (2019-present)
7. UConn's daVinci Robotics summer workshop for teachers of school children (2015-2019)
8. UConn KASET workshop (2017)
9. Electrical Engineering Department open house events
10. Engineering 2000 Program for recruitment of high school students to UConn
11. Lead coordinator for UTC-Institute for Advanced Systems Engineering seminar series event Committee (2015-2017)

Publication Review:

Journals:
- IEEE Transactions on Automatic Control (T-AC), IEEE Transactions on Robotics (T-RO), IEEE Transactions on Automation Science and Engineering (T-ASE), IEEE/ASME Transactions on Mechatronics, IFAC Automatica, European Journal of Control, IEEE Transactions on Control Systems Technology, IFAC Mechatronics, IEEE Transactions on Automation Science and Engineering, IEEE Transactions on Cybernetics, International Journal of Robotics Research, IEEE Transactions on Intelligent Transportation Systems, IET Journal of Control Theory and Applications, Asian Journal of Control, IEEE Access.

Conferences:
- IEEE Conference on Decision and Control (CDC), American Control Conference (ACC), IEEE/RSJ International Conference on Robotics and Automation (ICRA), IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), IEEE Multi-Conference on Systems and Control (MSC), ASME Dynamics, Systems, and Control Conference (DSCC), CASE, International Conference on Information Fusion (FUSION), IFAC World Congress

Academic Awards /Honors

1. IFAC World Congress 2020 Applications Paper Prize Finalist

2. AAUP-UConn Teaching Excellence for Teaching Innovation Award 2018, received a letter of appreciation from UConn President

3. Co-recipient of 2016 ISIF FUSION conference best student paper award – 1st runner up

4. Co-recipient of 2015 ASME Dynamics Systems and Controls Conference best student Robotics paper award

5. IEEE Control System Society (CSS) Video Contest Second Place – presented at IEEE Multi-Conference in Systems and Control (MSC) 2015 in Sydney Australia

6. UConn ECE Outstanding Teaching Award for academic year 2014-15

7. UConn Provost's letter for outstanding teaching performance in the academic years 2013-2014

8. Innovation Inventor's Award, University of Florida Office of Research/Office of Technology Licensing 2013

9. Best Paper in Session, 2012 ASME Dynamics, Systems and Controls Conference (Session: Nonlinear Systems, Paper No. 8778)

10. Best Dissertation Award in the Mechanical and Aerospace Engineering Department at the University of Florida, 2012

11. Poster Presentation Award for Research in Science (Engineering Section) at 'NSF Research Day 2010 Poster Presentation,' University of Florida (one of the four awards out of 104 poster participants across the disciplines, top poster in Science and Engineering)

Seminars/Talks

1. CPS Seminar, RBCCPS, Indian Institute of Science, Bangalore, India 2023
2. Technology Team Quarterly meeting presentation, Pitney Bowes, Jan 2022
3. NASA RETHi Industry Advisory Board meeting presentation, Dec 2021
4. Seminar at the IEEE CDC, Nice, France, 2019
5. ARM Institute Project Closeout seminar, 2019
6. Seminar series at Worcester Polytechnic Institute, Worcester, MA, 2019
7. CATS Conference, Rensselaer Polytechnic Institute, Troy, NY, 2019
8. Seminar series at Interdisciplinary Science and Engineering Complex, Northeastern University, Boston, MA, 2019
9. Seminar series at the University of Washington at Seattle, 2018
10. DoD-ARM Institute Kick-off event, Pittsburgh, PA, Nov. 2017
11. NY Automation and Robotics Conference at Rensselaer Polytechnic Institute, Collaborative Robotics Session, Nov 2017
12. Advanced Robotics for Manufacturing (ARM) Technology Road mapping event, (Invitation Only, 1 person per organization), July 2017
13. ABB Research Center Talk, Bloomfield, CT, 2015
14. Electrical Engineering department, Indian Institute of Technology, Delhi, India, 2015
15. United Technologies Research Center, Hartford, CT, 2014
16. Aerospace Engineering, University of Michigan, 2013
17. Electrical and Computer Engineering, University of Connecticut, 2013
18. Aerospace Engineering, University of Illinois, 2013

Graduate Student Advising/Mentoring (as a Major Advisor)
   Graduated -
1. Harish Ravichandar, *Methods for Imitation Learning and Human Intention Inference: Towards Seamless Human-Robot Collaboration*, Ph.D. dissertation, 2018 (Assistant Professor at Georgia Institute of Technology)
2. Gang Yao, *Object Shape Estimation and Tracking based on Earth Mover's Distance and Image Moments*, Ph.D. dissertation, 2020 (Research Engineer at UBTech Robotics)
3. Iman Salehi, *Dynamic System Model Learning and Control with Barrier Methods: Applications to Robotics and Autonomous Systems Safety,* Ph.D. dissertation, 2022 (Autonomy Engineer at Integer Technologies)
4. Ghananeel Rotithor, *Learning Methods for Image-based State Estimation and Control,* Ph.D. dissertation, 2023 (Machine Vision Engineer, Scalable Robotics)
5. Daniel Trombetta, *Human Intention Inference using Fusion of Gaze and Motion Information,* M.S. thesis, 2020 (Electrical Engineer – Dynetics, AL)
6. Ryan Saltus, *Estimation and Control Methods for Position-Based Visual Servo Control using Dual Quaternions*, M.S. thesis, 2020 (Mechanical Engineer – Motiv Space Systems)
7. Alexander Lyall, *Image-Based Range Estimation of Moving Target Using Gaussian Processes,* M.S. Thesis, 2023 (Controls Engineer, General Dynamics Applied Physical Sciences, Groton, CT)

   Current -
8. Rounak Bhattacharya, Ph.D. student, Expected Graduation: 2025
9. Vrithik Guthikonda, Ph.D. student, Expected Graduation: 2025

M. Engg Capstone Project (UConn's Professional Education Program)
1. Nathan White, *Shape Estimation of Flexible Objects/Electronics using Camera Sensor for Robotic Manipulation*, M. Engg., 2018
2. Samantha O'Connor, *An Assessment of SLAM Algorithms,* M. Engg., 2019

UG Students
1. Cesar Rodrigues – McNair Scholar – ABB robot motion control
2. Vishruti Patel

Honors student Thesis/Undergraduate Senior Design Advisor
1. Sushant Raj, Assembly Process Improvement with CoBot, 2022
2. Terry Zhao, Autonomous Search and Rescue Helicopter System, 2022
3. Akash Binoj, CloudBots: Autonomous Atmospheric Explorers 2022
4. Siddharth Suresh: Modern Helicopter Flight Control System Design, 2021
5. Krishnan Sureshkumar: Autonomous drone firefighter, sponsored by Sikorsky, 2020
6. Sikorsky Senior Design Team 2017, 2018, 2019, 2020, 2021
7. Movia Robotics Senior Design Team 2021
8. Noah Del Coro, Image classification using deep learning, 2020, (Current position: graduate student at the University of Michigan)
9. Hima Patel, High Power Electronic Speed Controller Integration for Drone Flight Control, 2020 (Current Position: graduate student at Purdue University)

University Teaching
1. Robot Control and Dynamics (ECE 3163) – New course
2. Learning and Nonlinear Control (ECE 6171) - New special topics course
3. Guest lecture course on *Human-Robot Collaboration* at Indian Institute of Technology Delhi, India (Overview of robotics and Cobots, Cyber-Physical-Human Systems concept, Basics of Expectation-Maximization, KF, EKF, Interacting Multiple Model filter, EM based intent estimation, IMM based intent estimation, Barrier and control Barrier functions, Applications to safe robot control design)
4. Instructor for a course on *Mobile Robotics* (Robot Modeling, Basics of Imaging, SLAM, Robot control, Vision- based Control)
5. Co-Instructor for UG *Introduction to Robotics* Course (ECE 3161)
6. Instructor for UG *Control Systems Theory* Course
7. Instructor for *Control Systems Lab* Course
8. Co-Instructor for *Introduction to Engineering* (ENGR 1166) – Freshman level course
9. Co-Instructor for MEM Robotics Course (Robot modeling, Forward and Inverse Kinematics)
10. Co-Instructor for Senior Design Projects
11. Co-Instructor for ENGR 5300: Special Topics in Engineering

Publications

Book Chapters
1. A. P. Dani, I. Salehi, "Learning First Principles Systems Knowledge from Data: Stability and Safety with Applications to Learning from Demonstration", in *Artificial Intelligence in Manufacturing: Concepts and Methods*, Edited by Masoud Soroush and Richard Braatz, 2023.
2. A. P. Dani, "Human Intent Prediction for Human-Robot Collaboration", in *Autonomous Robotics, Complexity and Nonlinearity*, a volume in the *Encyclopedia of Complexity and Systems Science*, Edited by Warren E. Dixon, Springer, 2022.
3. I. Salehi, G. Rotithor, A. P. Dani, "Safe Adaptive Trajectory Tracking Control of Robot for Human-Robot Interaction using Barrier Function Transformation", *in Collaborative Robots*, Edited by Dr. Jesus Hamilton Ortiz, 2021.
4. A. P. Dani, "Image-based Estimation for Robotics and Autonomous Systems", *in Encyclopedia of Systems and Control*, Edited by John Baillieul and Tariq Samad, Springer Nature, 2020.
5. A. P. Dani, I. Salehi, H. Ravichandar, G. Yao, "Learning and Coordination of Movement Primitives for Bimanual Manipulation Tasks using Concurrent Synchronization", *in Manufacturing in the Era of 4th Industrial Revolution: A World Scientific Reference Volume 2: Recent Advances in Industrial Robotics*, Edited by S. K. Gupta, V. Krovi, C. Schlenoff, WSPC, 2020, pp. 187-214.
6. H. Ravichandar, A. P. Dani, "Human Intention Inference using Expectation-Maximization Algorithm with Online Model Learning", *in Human Modeling for Bio-inspired Robotics: Mechanical Engineering in Assistive Technologies*, Edited by Jun Ueda and Yuichi Kurita, Elsevier, 2016, pp 217-246.
7. A.P. Dani and W. E. Dixon, *"Single Camera Structure and Motion Estimation" in Visual Servoing via Advanced Numerical Methods*, Edited by G. Chesi and K. Hashimoto,

Springer, *Lecture Notes in Control, and Information Sciences* Volume 401, 2010, pp. 209-229.

8. A. P. Dani**,** Z. Kan, and W. E. Dixon, "Real-time Structure Estimation in Dynamic Scenes using a Single Camera" *in Robotic Vision: Technologies for Machine Learning and Vision Applications*, Edited by Jose Garcia and Miguel Cazorla, IGI Global Publication, 2012, pp. 173-191.

Journal Articles

1. V. Guthikonda, A. P. Dani, "Shape Servoing of Deformable Objects using Model Estimation and Barrier Lyapunov Function", IEEE Transactions on Mechatronics, vol. 29, no. 6, pp. 4640-4650, 2024.
2. R. Bhattacharya, V. R. Guthikonda, A. P. Dani, "Adaptive Trajectory Synchronization with Time-Delayed Information", IEEE Control Systems Letters, vol. 7, pp. 3866-3871, 2023.
3. G. Rotithor, T. Taplin, A.P. Dani, W. E. Dixon, "Switching of Asymptotically Stable and Uniformly Ultimately Bounded Systems with Applications to Machine Vision", IEEE Transactions on Automatic Control, vol. 69, no. 9, pp. 6246-6252, 2024.
4. G. Rotithor, I. Salehi, E. Tunstel, A. P. Dani, "Stitching Dynamic Movement Primitives and Image-based Visual Servo Control", IEEE Transactions on Systems, Man, and Cybernetics: Systems, 2022, vol. 53, no. 5, pp. 2583-2593, 2023.
5. I. Salehi, T. Taplin, A. P. Dani, "Learning Discrete-Time Uncertain Nonlinear Systems with Probabilistic Safety and Stability Constraints", IEEE Open Journal of Control Systems, vol. 1, pp. 354-365, 2022.
6. G. Rotithor, D. Trombetta, R. Kamalapurkar, A. P. Dani, "Full and Reduced Order Observers for Image-based Depth Estimation using Concurrent Learning", IEEE Transactions on Control Systems Technology, vol. 29, no. 6, pp. 2647-2653, 2021.
7. D. Trombetta, G. Rotithor, I. Salehi, A. P. Dani, "Variable Structure Human Intention Estimator with Mobility and Vision Constraints as Model Selection Criteria", IFAC Mechatronics, vol. 76, pp. 102570, 2021.
8. I. Salehi, G. Rotithor, G. Yao, A. P. Dani, "Dynamical System Learning using Extreme Learning Machines with Safety and Stability Guarantees", International Journal of Adaptive Control and Signal Processing, vol. 35, no. 6, pp. 894-914, 2021.
9. A. P. Dani, I. Salehi, G. Rotithor, D. Trombetta, H. Ravichandar, "Human-in-the-loop Robot Control for Human-Robot Collaboration", IEEE Control Systems, vol. 40, no. 6, pp 29-56, 2020.
10. G. Yao, R. Saltus, A. P. Dani, "Shape Estimation for Elongated Deformable Object using B-spline Chained Multiple Random Matrices Model", International Journal of Intelligent Robotics and Applications, vol. 4, no. 4, pp. 429-440, 2020.
11. G. Yao, R. Saltus, A. P. Dani, "Image Moment-based Extended Object Tracking for Complex Motions", IEEE Sensors Journal, vol. 20, no. 12, pp. 6560-6572, 2020.
12. G. Yao, A. P. Dani, "Visual Tracking using Sparse Coding and Earth Mover's Distance", Frontiers in Robotics and AI, vol. 5, Aug 2018.
13. H. Ravichandar, A. P. Dani, "Learning Position and Orientation Dynamics from Demonstrations via Contraction Analysis", Autonomous Robots, vol. 43, no. 4, pp. 897-912, 2018.

14. H. Ravichandar, A. Kumar, A. P. Dani, "Gaze and Motion Information Fusion for Human Intention Inference", International Journal of Intelligent Robotics and Applications, vol. 2, no. 2, pp. 136-148, June 2018.
15. M. Allen, Q. Zhong, N. Kirsch, A. P. Dani, W. W. Clark and N. Sharma, "A Nonlinear Dynamics-Based Estimator for Functional Electrical Stimulation: Preliminary Results from Lower-Leg Extension Experiments", IEEE Transactions on Neural Systems & Rehabilitation Engineering, vol. 25, no. 12, pp. 2365-2374, Dec 2017.
16. G. Yao, A. P. Dani, "Gyro-aided Visual Tracking Using Iterative Earth Mover's Distance", IEEE Aerospace and Electronic Systems Magazine, vol. 32, no. 10, pp. 52-55, Oct 2017.
17. H. Ravichandar, A. P. Dani, "Human Intention Inference using E-M algorithm with Online Learning", IEEE Transactions on Automation Science and Engineering, vol. 14, no. 2, pp. 855-868, April 2017.
18. D. Chwa, A.P. Dani, and W. E. Dixon, "Range and Motion Estimation of a Monocular Camera Using Static and Moving Objects", IEEE Transactions on Control Systems Technology, vol. 24, no. 4, pp 1174-1183, 2016.
19. A.P. Dani, S.-J. Chung, S. Hutchinson, "Observer for Stochastic Nonlinear Systems via Contraction-Based Incremental Stability", IEEE Transactions on Automatic Control, vol. 60, no. 3, pp. 700-714, 2015.
20. J. Yang, A. P. Dani, S.-J. Chung, S. Hutchinson, "Vision-based Localization and Robot-Centric Mapping in Riverine Environments", Journal of Field Robotics, vol. 34, no. 3, pp. 429-450, 2015.
21. N. Fischer, A.P. Dani, N. Sharma, and W.E. Dixon, "Saturated Control of an Uncertain Nonlinear System with Input Delay" Automatica, vol 49, No. 6, pp. 1741-1747, 2013.
22. A.P. Dani, N. Fischer, and W. E. Dixon, "Single Camera Structure and Motion Estimation", IEEE Transactions on Automatic Control, vol 57, No. 1, pp. 241-246, 2012.
23. A.P. Dani, N. Fischer, Z. Kan, and W. E. Dixon, "Globally Exponentially Convergent Robust Observer for Vision-based Range Estimation", IFAC Mechatronics, Special Issue on Visual Servoing, Vol. 22, No. 4, pp. 381-389, 2012.
24. Z. Kan, A.P. Dani, J.M. Shea, and W. E. Dixon, "Network Connectivity Preserving Formation Stabilization and Obstacle Avoidance via A Decentralized Controller", IEEE Transactions on Automatic Control, Vol. 57, No. 7, pp. 1827-1832, 2012.

Conference Papers

1. A. P. Dani, S. Bhasin, "Reinforcement Learning for Image-Based Visual Servo Control", IEEE Conference on Decision and Control, 2023, pp. 4358-4363.
2. A. Lyall, A. P. Dani, "Image-based Range Estimation of a Moving Target using Gaussian Process Motion Models", IFAC World Congress 2023, pp. 11591-11596.
3. V. Guthikonda, G. Rotithor, A. P. Dani, "Shape Servoing of Deformable Objects using Adaptive Deformation Model Estimation", IFAC World Congress 2023, pp. 11603-11608.
4. T. Taplin, A. Lyall, A. P. Dani, "Multiple User Intent Prediction Using Interacting Multiple Model Joint Probabilistic Data Association Filter", IFAC World Congress, 2023, pp. 7528-7533.

5. R. Bhattacharya, G. Rotithor, A. P. Dani, "Learning-based State-dependent Coefficient Form Task Space Tracking Control of Soft Robot", American Control Conference, 2022, pp. 2899-2904.
6. G. Rotithor, A. P. Dani, "Deep Interacting Multiple Model Filtering", American Controls Conference, 2022, pp. 958-963.
7. I. Salehi, T. Taplin, A. P. Dani, "Chance-Constrained System Identification of Nonlinear Discrete Systems with Safety and Stability Guarantees", American Control Conference, 2022, pp. 1497-1502.
8. I. Salehi, G. Rotithor, R. Saltus, A. P. Dani, "Constrained Image-Based Visual Servoing using Barrier Functions", IEEE International Conference on Robotics and Automation, 2021, pp. 14254-14260.
9. R. Saltus, I. Salehi, G. Rotithor, A. P. Dani, "Dual Quaternion Visual Servo Control", IEEE Conference on Decision and Control, Dec 2020, pp. 5956-59615.
10. I. Salehi, G. Rotithor, D. Trombetta, A. P. Dani, "Safe Control of an Uncertain Euler-Lagrange System with Full-State Constraints using Barrier Lyapunov Function", IEEE Conference on Decision and Control, Dec 2020, pp. 3310-3315.
11. E. Tunstel, A. P. Dani, C. Martinez, B. Blakeslee, J. Mendoza, R. Saltus, D. Trombetta, G. Rotithor, T. Fuhlbrigge, D. Lasko, J. Wang, "Robotic Wire Pinning for Wire Harness Assembly Automation", International Conference on Advanced Intelligent Mechatronics, July 2020.
12. G. Rotithor, A. P. Dani, "Combining Motion Primitives and Image-based Visual Servo Control", International Symposium on Flexible Automation, July, 2020.
13. D. Trombetta, G. Rotithor, I. Salehi, A. P. Dani, "Human Intention Estimation using Fusion of Pupil and Hand Motion", IFAC World Congress, July, 2020.
14. G. Rotithor, D. Trombetta, R. Kamalapurkar, A. P. Dani, "Reduced Order Observer for Structure from Motion using Concurrent Learning", IEEE Proc. of Conference on Decision and Control, 2019, pp. 6815-6820.
15. I. Salehi, A. P. Dani, G. Yao, "Learning Dynamical Systems with Barrier Constraint", IEEE International Conference on Robotics and Automation, 2019, pp. 22-28.
16. G. Rotithor, R. Saltus, R. Kamalapurkar, A. P. Dani, "Observer Design for Structure from Motion using Concurrent Learning", American Controls Conference, 2019, pp. 2384-2389.
17. H. Ravichandar, D. Trombetta, A. P. Dani, "Human Intention-Driven Learning Control for Trajectory Synchronization in Human-Robot Collaborative Tasks", IFAC Cyber Physical Human Systems Conference, 2018.
18. G. Yao, K. Hunte, A. P. Dani, "Image Moment-based Object Tracking and Shape Estimation for Complex Motions", American Control Conference, 2018, pp. 5819-5824.
19. H. Ravichandar, I. Salehi, B. Baillie, G. Bollas, A. P. Dani, "Learning Stable Nonlinear Dynamical Systems with External Inputs using Gaussian Mixture Models", American Controls Conference, 2018, pp. 4825-4830.
20. B. P. Baillie, H. Ravichandar I. Salehi, A. P. Dani, G. Bollas, "Approaches for Creation and Evaluation of Computationally Efficient Thermofluid System Models", IFAC International Symposium on Advanced Control of Chemical Processes, 2018.
21. H. Ravichandar, I. Salehi, A. P. Dani, "Learning Partially Contracting Dynamical Systems from Demonstrations", Proceedings of the 1st Annual Conference on Robot Learning, PMLR, vol 78, 2017, pp. 369-378.

22. G. Yao, A. P. Dani, "Image Moment-based Random Hypersurface Model for Extended Object Tracking", International Conference on Information Fusion, 2017, doi: 10.23919/ICIF.2017.8009883.
23. H. Ravichandar, A. Kumar, A. P. Dani, K. R. Pattipati, "Learning and Predicting Sequential Tasks using Recurrent Neural Networks and Multiple Model Filtering", AAAI Symposium on Shared Autonomy in Research and Practice, 2016, pp. 331-337.
24. P. K. Thota, H. Ravichandar, A. P. Dani, "Learning and Synchronization of Movement Primitives for Bimanual Manipulation Tasks", IEEE Conference on Decision and Control, 2016, pp. 945-950.
25. G. Yao, M. Williams, A. P. Dani, "Gyro-aided Visual Tracking Using Iterative Earth Mover's Distance", IEEE International Conference on Information Fusion, 2016, pp. 2317-2323. (*Best Student Paper Award – 1st runner up*)
26. H. Ravichandar, A. Kumar, A. P. Dani, "Bayesian Human Intention Inference Through Multiple Model Filtering with Gaze-based Priors", IEEE International Conference on Information Fusion, 2016, pp. 2296-2302.
27. H. Ravichandar, P. K. Thota, A. P. Dani, "Learning Periodic Motions from Human Demonstrations using Transverse Contraction Analysis", American Controls Conference, 2016, pp. 4853-4858.
28. P. K. Thota, A. P. Dani, P. B. Luh and S. Gupta, "Cooling Load Forecasting for Chiller Plants Using Similar Day based Wavelet Neural Networks", IEEE International Conference on Complex Systems Engineering, 2015.
29. H. Ravichandar, A. P. Dani, J. Khadijah-Hajdu, N. Kirsch, Q. Zhong, N. Sharma, "Expectation Maximization Method to Identify an Electrically Stimulated Musculoskeletal Model", ASME Dynamics, Systems and Control Conference, 2015.
30. H. Ravichandar, A. P. Dani, "Learning Contracting Nonlinear Dynamics from Human Demonstrations for Robot Motion Planning", ASME Dynamics, Systems and Control Conference 2015. (*Best Robotics Student Paper Award*)
31. H. Ravichandar, A. P. Dani, "Human Motion Modeling and Intention Inference using Artificial Neural Network-based E-M Algorithm", IEEE International Conference on Intelligent Robots & Systems 2015, pp. 1819-1824.
32. H. Ravichandar, A. P. Dani, "Human Intention Inference through Interacting Multiple Model Filtering", IEEE International Conference on Multisensor-Fusion and Information Integration, 2015, pp. 220-225.
33. A. P. Dani, M. McCourt, J. W. Curtis, S. Mehta, "Information Fusion in Human-Robot Collaboration using Neural Network Representation", IEEE Systems, Man, Cybernetics Conference, 2014, pp.2114-2120.
34. H. Ravichandar, A. P. Dani, "Gyro-aided Image-Based Tracking using Mutual Information Optimization and User Inputs", IEEE Conference on Systems, Man, Cybernetics, 2014, pp. 858-863.
35. A. P. Dani, N. Sharma, "A Discrete-time Nonlinear Estimator for an Orthosis-aided Gait", ASME Dynamics Systems and Controls Conference, 2014, paper no. DSCC2014-6161, pp. V001T04A003, 9 pages. (Invited Paper)
36. N. Sharma, A. P. Dani, "Nonlinear estimation of gait kinematics during functional electric stimulation and orthosis-based walking", American Controls Conference 2014, pp. 4778-4783.

37. A.P. Dani, G. Panahandeh, S.-J. Chung, S. Hutchinson, "Image Moments for Higher-Level Feature Based Navigation", IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2013, pp. 602-609.

38. J. Yang, A.P. Dani, S.-J. Chung, S. Hutchinson, "Observer Design via Hybrid Contraction Analysis for UAS Navigation in Riverine Environments", AIAA Guidance, Navigation, and Control Conference (GNC), Boston, MA. 2013.

39. A.P. Dani, S.-J. Chung, S. Hutchinson, "Observer Design for Stochastic Nonlinear Systems using Contraction Analysis", IEEE Conference on Decision and Controls, 2012, pp. 6028-6035.

40. S. Jang, A. P. Dani, C. Crane, W. E. Dixon, "Experimental Results for Moving Object Structure Estimation using an Unknown Input Observer Approach", ASME Dynamics, Systems and Control Conference, 2012, paper no. DSCC2012-MOVIC2012-8778, pp. 597-606, 10 pages. *(Best Paper in Session)*

41. D. Chwa, A. P. Dani, H.-J. Kim, W. E. Dixon, "Camera Motion Estimation for 3-D Structure Reconstruction of Moving Objects", IEEE International Conference on Systems, Man and Cybernetics, Seoul, Korea, 2012, pp. 1788-1793.

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