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Research Areas

Control and System Engineering, Robotics and Mechatronics Systems

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Design, modelling and control of a textile-based wearable actuating system with sensor feedback for therapeutic applications**
ÇELEBİ M. F., Tunçay Atalay A., Atalay Ö., GAZI V.
Transactions of the Institute of Measurement and Control, 2024 (SCI-Expanded)
- II. **Swarm Trajectories Generation for Target Capturing With Uncertain Information**
Fedele G., D'Alfonso L., Bono A., GAZI V.
IEEE Transactions on Control of Network Systems, vol.10, no.4, pp.1986-1996, 2023 (SCI-Expanded)
- III. **Target Capturing in an Ellipsoidal Region with a Swarm of Quadcopter Agents with Different Social Value Orientation Parameters**
Merzi A., GAZI V., Fedele G., D'Alfonso L.
Journal of Intelligent and Robotic Systems: Theory and Applications, vol.108, no.4, 2023 (SCI-Expanded)
- IV. **Online and Real-Time Trajectory Generation Method for Unforeseen Events Using a Modified Spline Approach**
Toksoz M. A., EFE M. Ö., GAZI V.
IEEE ROBOTICS AND AUTOMATION LETTERS, vol.8, no.1, pp.232-239, 2023 (SCI-Expanded)
- V. **Distributed sensor deployment using potential fields**
Hanay Y. S., Gazi V.
AD HOC NETWORKS, vol.67, pp.77-86, 2017 (SCI-Expanded)
- VI. **Implementation Studies of Robot Swarm Navigation Using Potential Functions and Panel Methods**
Merheb A., Gazi V., SEZER UZOL N.
IEEE-ASME TRANSACTIONS ON MECHATRONICS, vol.21, no.5, pp.2556-2567, 2016 (SCI-Expanded)
- VII. **Experimental studies on chemical concentration map building by a multi-robot system using bio-inspired algorithms**
Turduev M., Cabrita G., Kirtay M., Gazi V., Marques L.
AUTONOMOUS AGENTS AND MULTI-AGENT SYSTEMS, vol.28, no.1, pp.72-100, 2014 (SCI-Expanded)

- VIII. **Single-View Distance-Estimation-Based Formation Control of Robotic Swarms**
Fidan B., Gazi V., Zhai S., Cen N., Karatas E.
IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS, vol.60, no.12, pp.5781-5791, 2013 (SCI-Expanded)
- IX. **On Lagrangian dynamics based modeling of swarm behavior**
Gazi V.
PHYSICA D-NONLINEAR PHENOMENA, vol.260, pp.159-175, 2013 (SCI-Expanded)
- X. **A Target Tracking Approach for Nonholonomic Agents Based on Artificial Potentials and Sliding Mode Control**
Gazi V., Fidan B., Ordonez R., Koksals M. I.
JOURNAL OF DYNAMIC SYSTEMS MEASUREMENT AND CONTROL-TRANSACTIONS OF THE ASME, vol.134, no.6, 2012 (SCI-Expanded)
- XI. **Swarm Stability and Optimization**
Gazi V., Passino K. M.
SWARM STABILITY AND OPTIMIZATION, pp.3-283, 2011 (SCI-Expanded)
- XII. **Experimental study on the effects of communication on cooperative search in complex environments**
Cayirpunar O., Gazi V., Tavli B., Cervera E., Witkowski U., Penders J.
USING ROBOTS IN HAZARDOUS ENVIRONMENTS: LANDMINE DETECTION, DE-MINING AND OTHER APPLICATIONS, pp.535-556, 2010 (SCI-Expanded)
- XIII. **Asynchronous particle swarm optimization-based search with a multi-robot system: simulation and implementation on a real robotic system**
Akat S. B., Gazi V., Marques L.
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, vol.18, no.5, pp.749-764, 2010 (SCI-Expanded)
- XIV. **Laser based cooperative multi-robot map building for indoor environments**
Atas Y., Cayirpunar O., Akat S. B., Gazi V., Alboul L.
USING ROBOTS IN HAZARDOUS ENVIRONMENTS: LANDMINE DETECTION, DE-MINING AND OTHER APPLICATIONS, pp.599-614, 2010 (SCI-Expanded)
- XV. **Adaptive internal model based formation control of a class of multi-agent systems**
Gül E., Gazi V.
Proceedings of the 2010 American Control Conference, ACC 2010, pp.4800-4805, 2010 (SCI-Expanded)
- XVI. **Adaptive formation control and target tracking in a class of multi-agent systems**
Duran S., Gazi V.
Proceedings of the 2010 American Control Conference, ACC 2010, pp.75-80, 2010 (SCI-Expanded)
- XVII. **Comparison of three orientation agreement strategies in self-propelled particle systems with turn angle restrictions in synchronous and asynchronous settings**
Samiloglu A. T., Gazi V., KOKU A. B.
ASIAN JOURNAL OF CONTROL, vol.10, no.2, pp.212-232, 2008 (SCI-Expanded)
- XVIII. **Stability of an asynchronous swarm with time-dependent communication links**
Gazi V.
IEEE TRANSACTIONS ON SYSTEMS MAN AND CYBERNETICS PART B-CYBERNETICS, vol.38, no.1, pp.267-274, 2008 (SCI-Expanded)
- XIX. **Swarm tracking using artificial potentials and sliding mode control**
Yao J., Ordonez R., Gazi V.
JOURNAL OF DYNAMIC SYSTEMS MEASUREMENT AND CONTROL-TRANSACTIONS OF THE ASME, vol.129, no.5, pp.749-754, 2007 (SCI-Expanded)
- XX. **Aggregation, foraging, and formation control of swarms with non-holonomic agents using potential functions and sliding mode techniques**
Gazi V., Fidan B., Hanay Y. S., Köksals M. I.
Turkish Journal of Electrical Engineering and Computer Sciences, vol.15, no.2, pp.149-168, 2007 (SCI-Expanded)
- XXI. **Target tracking using artificial potentials and sliding mode control**
Gazi V., Ordonez R.

- INTERNATIONAL JOURNAL OF CONTROL, vol.80, no.10, pp.1626-1635, 2007 (SCI-Expanded)
- XXII. **Output regulation of a class of linear systems with switched exosystems**
Gazi V.
INTERNATIONAL JOURNAL OF CONTROL, vol.80, no.10, pp.1665-1675, 2007 (SCI-Expanded)
- XXIII. **Decentralized output regulation of a class of nonlinear systems**
Gazi V., Passino K. M.
INTERNATIONAL JOURNAL OF CONTROL, vol.79, no.12, pp.1512-1522, 2006 (SCI-Expanded)
- XXIV. **Asynchronous cyclic pursuit**
Samiloglu A. T., Gazi V., Koku B.
FROM ANIMALS TO ANIMATS 9, PROCEEDINGS, vol.4095, pp.667-678, 2006 (SCI-Expanded)
- XXV. **Swarm aggregations using artificial potentials and sliding-mode control**
Gazi V.
IEEE TRANSACTIONS ON ROBOTICS, vol.21, no.6, pp.1208-1214, 2005 (SCI-Expanded)
- XXVI. **Stability of a one-dimensional discrete-time asynchronous swarm**
Gazi V., Passino K.
IEEE TRANSACTIONS ON SYSTEMS MAN AND CYBERNETICS PART B-CYBERNETICS, vol.35, no.4, pp.834-841, 2005 (SCI-Expanded)
- XXVII. **Formation control of a multi-agent system using non-linear servomechanism**
Gazi V.
INTERNATIONAL JOURNAL OF CONTROL, vol.78, no.8, pp.554-565, 2005 (SCI-Expanded)
- XXVIII. **A class of attractions/repulsion functions for stable swarm aggregations**
Gazi V., Passino K.
INTERNATIONAL JOURNAL OF CONTROL, vol.77, no.18, pp.1567-1579, 2004 (SCI-Expanded)
- XXIX. **Stability analysis of social foraging swarms**
Gazi V., Passino K.
IEEE TRANSACTIONS ON SYSTEMS MAN AND CYBERNETICS PART B-CYBERNETICS, vol.34, no.1, pp.539-557, 2004 (SCI-Expanded)
- XXX. **Stability analysis of swarms**
Gazi V., Passino K.
IEEE TRANSACTIONS ON AUTOMATIC CONTROL, vol.48, no.4, pp.692-697, 2003 (SCI-Expanded)
- XXXI. **Complex control system design and implementation - Using the NIST-RCS software library**
Moore M., Gazi V., Passino K., Shackelford W., Proctor F.
IEEE CONTROL SYSTEMS MAGAZINE, vol.19, no.6, pp.12-28, 1999 (SCI-Expanded)

Articles Published in Other Journals

- I. **A Plug & Play Command Generator for Swarm Formation on Multiple Arbitrary Shaped Orbits: a Diffeomorphism-based approach**
Bono A., D'Alfonso L., Fedele G., GAZI V.
IEEE Control Systems Letters, vol.7, pp.2407-2412, 2023 (Scopus)

Refereed Congress / Symposium Publications in Proceedings

- I. **Textile-Based Thermally Driven Actuators for Soft Robotic Mechanotherapy Applications***
ÇELEBİ M. F., Beler Z., Dede E., KOÇAK E. D., Atalay Ö., TUNÇAY ATALAY A., GAZI V.
8th International Conference on Control, Decision and Information Technologies (CoDIT), İstanbul, Turkey, 17 - 20 May 2022, pp.1303-1308
- II. **Target Capturing in an Ellipsoidal Region with a Swarm of Quadrotor UAVs**
Merzi M. A., GAZI V., Fedele G., D'Alfonso L., Bono A.

International Conference on Unmanned Aircraft Systems (ICUAS), Dubrovnik, Croatia, 21 - 24 June 2022, pp.972-981

- III. **A Swarm Model for Target Capturing in a Polygonal Strip**
Bono A., D'Alfonso L., Fedele G., GAZI V.
8th International Conference on Control, Decision and Information Technologies (CoDIT), İstanbul, Turkey, 17 - 20 May 2022, pp.297-302
- IV. **Modelling and Coordination of a Swarm of Quadrotors Using Lagrange Dynamics and Potential Functions**
Halci B., Gazi V., CİHAN O.
24th IEEE International Conference on Emerging Technologies and Factory Automation (ETFA), Zaragoza, Spain, 10 - 13 September 2019, pp.963-970
- V. **Decentralized Formation Control of a Swarm of Quadrotor Helicopters**
Toksoz M. A., Oguz S., Gazi V.
IEEE 15th International Conference on Control and Automation (ICCA), Edinburgh, Saint Helena, 16 - 19 July 2019, pp.1006-1013
- VI. **Chemical concentration map building using whale optimization algorithm**
Merzi A., Gazi V.
2017 IEEE Symposium Series on Computational Intelligence, SSCI 2017, Hawaii, United States Of America, 27 November - 01 December 2017, vol.2018-January, pp.1-8
- VII. **Particle swarm optimization based distributed agreement in multi-agent dynamic systems**
Gazi V., Ordonez R.
2014 IEEE Symposium on Swarm Intelligence, SIS 2014, Florida, United States Of America, 9 - 12 December 2014, pp.174-180
- VIII. **Sensor coverage maximization with potential fields**
Hanay Y. S., Gazi V.
19th IEEE Symposium on Computers and Communications, ISCC 2014, Funchal, Portugal, 23 - 26 June 2014
- IX. **Satellite formation flying: Robust algorithms for propulsion, path planning and control**
Saaj C., Lappas V., Richie D., Gazi V., Schaub H.
2009 10th European Control Conference, ECC 2009, Budapest, Hungary, 23 - 26 August 2009, pp.2456-2463
- X. **Distributed Output Agreement in a Class of Uncertain Linear Heterogeneous Multi-Agent Dynamic Systems**
Gazi V.
13th European Control Conference (ECC), Strasbourg, France, 24 - 27 June 2014, pp.177-183
- XI. **Indirect adaptive formation control with nonlinear dynamics and parametric uncertainty**
Guler S., Koksal N., Fid An B., Gazi V.
2013 9th Asian Control Conference, ASCC 2013, İstanbul, Turkey, 23 - 26 June 2013
- XII. **Distributed adaptive output agreement in a class of multi-agent systems**
Gazi V.
2013 9th Asian Control Conference, ASCC 2013, İstanbul, Turkey, 23 - 26 June 2013
- XIII. **Stable Adaptive Particle Swarm Optimization**
Djaneye-Boundjou O., Ordonez R., Gazi V.
13th International Conference on Control, Automation and Systems (ICCAS), Gwangju, South Korea, 20 - 23 October 2013, pp.440-445
- XIV. **Adaptive Formation Control and Target Tracking in a Class of Multi-Agent Systems: Formation Maneuvers**
Gazi V., Fidan B.
13th International Conference on Control, Automation and Systems (ICCAS), Gwangju, South Korea, 20 - 23 October 2013, pp.78-85
- XV. **Virtual Cancellation Plume for Multiple Odor Source Localization**
Cabrita G., Marques L., Gazi V.
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Tokyo, Japan, 3 - 08 November 2013,

pp.5552-5558

- XVI. **Stochastic Stability Analysis of the Particle Dynamics in the PSO Algorithm**
Gazi V.
IEEE International Conference on Control Applications (CCA) Part of 6th IEEE Multi-Conference on Systems and Control (IEEE MSC), Dubrovnik, Croatia, 3 - 05 October 2012, pp.708-713
- XVII. **Adaptive Internal Model Based Formation Control of a Class of Multi-Agent Systems with Switched Exosystems**
Gul E., Gazi V.
24th Chinese Control and Decision Conference (CCDC), Taiyuan, China, 23 - 25 May 2012, pp.6-13
- XVIII. **Cooperative chemical concentration map building using decentralized asynchronous particle swarm optimization based search by mobile robots**
Turduev M., Atas Y., Sousa P., Gazi V., Marques L.
23rd IEEE/RSJ 2010 International Conference on Intelligent Robots and Systems, IROS 2010, Taipei, Taiwan, 18 - 22 October 2010, pp.4175-4180
- XIX. **Implementation of robot formation control and navigation using real-time panel method**
Merheb A., Atas Y., Gazi V., SEZER UZOL N.
23rd IEEE/RSJ 2010 International Conference on Intelligent Robots and Systems, IROS 2010, Taipei, Taiwan, 18 - 22 October 2010, pp.5001-5006
- XX. **Experimental study of robot formation control and navigation using potential functions and panel method**
Merheb A., Gazi V., SEZER UZOL N.
Joint 41st International Symposium on Robotics, ISR 2010 and 6th German Conference on Robotics 2010, ROBOTIK 2010, Munich, Germany, 7 - 09 June 2010, vol.1, pp.586-593
- XXI. **Chemical Concentration Map Building Through Bacterial Foraging Optimization Based Search Algorithm by Mobile Robots**
Turduev M., Kirtay M., Sousa P., Gazi V., Marques L.
IEEE International Conference on Systems, Man and Cybernetics, İstanbul, Turkey, 10 - 13 October 2010, pp.3242-3249
- XXII. **Target tracking using adaptive gain backstepping control**
Fidan B., Gazi V.
10th IFAC International Workshop on Adaptation and Learning in Control and Signal Processing, ALCOSP 2010, Antalya, Turkey, 26 - 28 August 2010, vol.1, pp.83-88
- XXIII. **Design of circling around a target controllers for mobile robots by feedback linearization**
Samiloglu A. T., Gazi V., KOKU A. B.
IFAC International Workshop on Periodic Control Systems, PSYCO 2010, Antalya, Turkey, 26 - 28 August 2010, vol.4, pp.138-143
- XXIV. **Experimental study on the effects of communication range on cooperative robotic search in complex environments**
Çaylırpınar Ö., Gazi V., Tavli B., Cervera E., Witkowski U., Penders J.
2009 2nd International Conference on Robot Communication and Coordination, RoboComm 2009, Odense, Denmark, 31 March - 02 April 2009
- XXV. **Particle swarm optimization with dynamic neighborhood topology: Three neighborhood strategies and preliminary results**
Burak Akat S., Gazi V.
2008 IEEE Swarm Intelligence Symposium, SIS 2008, St. Louis, MO, United States Of America, 21 - 23 September 2008
- XXVI. **Decentralized asynchronous particle swarm optimization**
Burak Akat S., Gazi V.
2008 IEEE Swarm Intelligence Symposium, SIS 2008, St. Louis, MO, United States Of America, 21 - 23 September 2008
- XXVII. **A synergetic approach for developing practical multi-robot applications**

- Cervera E., Gazi V.
39th International Symposium on Robotics, ISR 2008, Seoul, South Korea, 15 - 17 October 2008, pp.495-498
- XXVIII. **Single view depth estimation based formation control of robotic swarms: Obstacle avoidance, simulation, and practical issues**
Zhai S., Fidan B., Öztürk S. C., Gazi V.
2008 Mediterranean Conference on Control and Automation, MED'08, Ajaccio-Corsica, France, 25 - 27 June 2008, pp.1162-1167
- XXIX. **Tracking a maneuvering target with a non-holonomic agent using artificial potentials and sliding mode control**
Köksal M. I., Gazi V., Barış F., Ordóñez R.
2008 Mediterranean Conference on Control and Automation, MED'08, Ajaccio-Corsica, France, 25 - 27 June 2008, pp.1174-1179
- XXX. **An Experiment on Squad Navigation of Human and Robots**
Nomdedeu L., Sales J., Cervera E., Alemany J., Sebastia R., Penders J., Gazi V.
10th International Conference on Control, Automation, Robotics and Vision, Ha-Noi, Vietnam, 17 - 20 December 2008, pp.1212-1213
- XXXI. **Single view depth estimation based formation control of robotic swarms: Implementation using realistic robot simulator**
Gazi V., Fidan B., Zhai S.
11th International Conference on Climbing and Walking Robots and the Support Technologies for Mobile Machines, CLAWAR 2008, Coimbra, Portugal, 8 - 10 September 2008, pp.1079-1089
- XXXII. **Agent Standard Protocols for Building Multi-Robot Applications**
Cervera E., Gazi V.
10th International Conference on Intelligent Autonomous Systems, Baden Baden, Germany, 24 July 2008, pp.1-5
- XXXIII. **Agents at Play: Off-the-shelf Software for Practical Multi-robot Applications**
Cervera E., Sales J., Nomdedeu L., Marin R., Gazi V.
IEEE/RSJ International Conference on Intelligent Robots and Systems, Nice, France, 22 - 26 September 2008, pp.2719-2720
- XXXIV. **Asynchronous particle swarm optimization Eşzamanlı olmayan parçacık sürü eniyileme yöntemi**
Gazi V.
2007 IEEE 15th Signal Processing and Communications Applications, SIU, Eskişehir, Turkey, 11 - 13 June 2007
- XXXV. **Particle swarm optimization with dynamic neighborhood Değişken komşuluklu parçacık sürü eniyileme yöntemi**
Gazi V.
2007 IEEE 15th Signal Processing and Communications Applications, SIU, Eskişehir, Turkey, 11 - 13 June 2007
- XXXVI. **Formation control with potential functions and Newton's iteration**
Hanay Y. S., Hunerli H. V., Köksal M. I., Samiloğlu A. T., Gazi V.
2007 9th European Control Conference, ECC 2007, Kos, Greece, 2 - 05 July 2007, pp.4584-4590
- XXXVII. **Aggregation in a swarm of non-holonomic agents using artificial potentials and sliding mode control**
Gazi V., Köksal M. I., Fidan B.
2007 9th European Control Conference, ECC 2007, Kos, Greece, 2 - 05 July 2007, pp.1485-1491
- XXXVIII. **Coordination and control of multi-agent dynamic systems: Models and approaches**
Gazi V., Fidan B.
2nd International Workshop on Swarm Robotics, SAB 2006, Rome, Italy, 30 September - 01 October 2006, vol.4433 LNCS, pp.71-102
- XXXIX. **Spacecraft swarm navigation and control using artificial potential field and sliding mode control**
Saaj C. M., Lappas V., Gazi V.
2006 IEEE International Conference on Industrial Technology, ICIT, Mumbai, India, 15 - 17 December 2006, pp.2646-2651
- XL. **Asynchronous cyclic pursuit**
Şamiloğlu A. T., Gazi V., KOKU A. B.

9th International Conference on Simulation of Adaptive Behavior, SAB 2006, Rome, Italy, 25 - 29 September 2006, vol.4095 LNAI, pp.667-678

- XXI. Swarm tracking using artificial potentials and sliding mode control**
Yao J., Ordonez R., Gazi V.
45th IEEE Conference on Decision and Control, California, United States Of America, 13 - 15 December 2006, pp.4670-4671
- XLII. Effects of asynchronism and neighborhood size on clustering in self-propelled particle systems**
Şamiloğlu A. T., Gazi V., KOKU A. B.
ISCIS 2006: 21th International Symposium on Computer and Information Sciences, İstanbul, Turkey, 1 - 03 November 2006, vol.4263 LNCS, pp.665-676
- XLIII. Target tracking using artificial potentials and sliding mode control**
Gazi V., Ordóñez R.
Proceedings of the 2004 American Control Conference (AAC), Boston, MA, United States Of America, 30 June - 02 July 2004, vol.6, pp.5588-5593
- XLIV. Swarm Aggregations Using Artificial Potentials and Sliding Mode Control**
Gazi V.
42nd IEEE Conference on Decision and Control, Maui, HI, United States Of America, 9 - 12 December 2003, vol.2, pp.2041-2046
- XLV. Formation Control of a Multi-Agent System Using Decentralized Nonlinear Servomechanism**
Gazi V.
42nd IEEE Conference on Decision and Control, Maui, HI, United States Of America, 9 - 12 December 2003, vol.3, pp.2531-2536
- XLVI. A class of attraction/repulsion functions for stable swarm aggregations**
Gazi V., Passino K. M.
41st IEEE Conference on Decision and Control, Las Vegas, NV, United States Of America, 10 - 13 December 2002, vol.3, pp.2842-2847
- XLVII. Stability analysis of social foraging swarms: Combined effects of attractant/repellent profiles**
Gazi V., Passino K. M.
41st IEEE Conference on Decision and Control, Las Vegas, NV, United States Of America, 10 - 13 December 2002, vol.3, pp.2848-2853
- XLVIII. Stability analysis of swarms**
Gazi V., Passino K.
20th Annual American Control Conference (ACC), Alaska, United States Of America, 8 - 10 May 2002, vol.1-6, pp.1813-1818
- XLIX. Stability analysis of swarms in an environment with an Attractant/Repellent profile**
Gazi V., Passino K.
20th Annual American Control Conference (ACC), Alaska, United States Of America, 8 - 10 May 2002, vol.1-6, pp.1819-1824
- L. Decentralized regulation of a class of nonlinear systems**
Gazi V., Passino K. M.
40th IEEE Conference on Decision and Control (CDC), Orlando, FL, United States Of America, 4 - 07 December 2001, vol.3, pp.3014-3019
- LI. Stability of a one-dimensional discrete-time asynchronous swarm**
Gazi V., Passino K.
IEEE International Symposium on Intelligent Control (ISIC 01), Mexico City, Mexico, 5 - 07 September 2001, pp.19-24
- LII. Adaptive control of discrete time nonlinear systems using dynamic structure approximators**
Gazi V., Passino K., Farrell J.
American Control Conference (ACC), Darlington, United Kingdom, 25 - 27 June 2001, pp.3091-3096
- LIII. Direct adaptive control using dynamic structure fuzzy systems**
Gazi V., Passino K.

2000 American Control Conference (ACC 2000), Illinois, United States Of America, 28 - 30 June 2000, pp.1954-1958

LIV. Real-time control system software for intelligent system development: Experiments and an educational program

Gazi V., Moore M., Passino K.

Joint Conference on the Science and Technology of Intelligent Systems ISIC/CIRA/ISAS, Maryland, United States Of America, 14 - 17 September 1998, pp.102-107

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