

Assoc. Prof. Volkan Sezer

Personal Information

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Education Information

Doctorate, İstanbul Teknik Üniversitesi, Elektrik-Elektronik Fakültesi, Kontrol Ve Otomasyon Mühendisliği Bölümü, Turkey 2010 - 2014

Postgraduate, İstanbul Teknik Üniversitesi, Fen Bilimleri Enstitüsü, Mekatronik Müh., Turkey 2005 - 2008

Undergraduate, Yıldız Teknik Üniversitesi, Elektrik-Elektronik Fakültesi, Elektronik Ve Haberleşme Mühendisliği Bölümü, Turkey 2001 - 2005

Dissertations

Doctorate, A novel obstacle avoidance approach for nonholonomic ground vehicle autonomy, İstanbul Teknik Üniversitesi, Elektrik-Elektronik Fakültesi, Kontrol Ve Otomasyon Mühendisliği Bölümü, 2012

Postgraduate, Modeling and optimal power management of a parallel hybrid electric vehicle, İstanbul Teknik Üniversitesi, 2008

Research Areas

Technical Sciences, Information Systems, Communication and Control Engineering, Control and System Engineering, Robotics and Mechatronics Systems

Academic Titles / Tasks

Associate Professor, Istanbul Technical University, Elektrik-Elektronik, Kontrol Ve Otomasyon Mühendisliği, 2019 - Continues

Assistant Professor, Istanbul Technical University, Kontrol Ve Otomasyon Mühendisliği Bölümü, 2018 - 2019

Assistant Professor, İstanbul Teknik Üniversitesi, Elektrik-Elektronik Fakültesi, Kontrol Ve Otomasyon Mühendisliği Bölümü, 2015 - 2018

Lecturer PhD, İstanbul Teknik Üniversitesi, Makine Fakültesi, Makine Mühendisliği Bölümü, 2013 - 2015

Lecturer PhD, İstanbul Teknik Üniversitesi, Elektrik-Elektronik Fakültesi, Kontrol Ve Otomasyon Mühendisliği Bölümü, 2013 - 2013

Research Assistant, İstanbul Teknik Üniversitesi, Makine Fakültesi, Makine Mühendisliği Bölümü, 2011 - 2013

Academic and Administrative Experience

İstanbul Teknik Üniversitesi, Kontrol Ve Otomasyon Müh., 2017 - Continues

İstanbul Teknik Üniversitesi, Fen Bilimleri Enstitüsü, Mekatronik Mühendisliği (Dr), 2015 - Continues

Courses

Servo Motors, Undergraduate, 2016 - 2017

OTOMATİK KONTROL SİSTEMLERİ, Undergraduate, 2016 - 2017

Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- I. **Driving shaft lifetime enhancement by hybrid electrification**
SEZER V.
Proceedings Of The Institution Of Mechanical Engineers Part D-Journal Of Automobile Engineering, vol.233, no.3, pp.572-584, 2019 (Journal Indexed in SCI)
- II. **Design and implementation of a new speed planner for semiautonomous systems**
Demir M., Sezer V.
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, vol.26, no.2, pp.693-706, 2018 (Journal Indexed in SCI)
- III. **Intelligent decision making for overtaking maneuver using mixed observable Markov decision process**
Sezer V.
JOURNAL OF INTELLIGENT TRANSPORTATION SYSTEMS, vol.22, no.3, pp.201-217, 2018 (Journal Indexed in SCI)
- IV. **Combined fuzzy approach for online speed planning and control with real vehicle implementation**
Sezer V.
INTERNATIONAL JOURNAL OF VEHICLE DESIGN, vol.68, no.4, pp.329-345, 2015 (Journal Indexed in SCI)
- V. **A novel obstacle avoidance algorithm: "Follow the Gap Method"**
Sezer V., Gökaşan M.
ROBOTICS AND AUTONOMOUS SYSTEMS, vol.60, no.9, pp.1123-1134, 2012 (Journal Indexed in SCI)
- VI. **A Novel ECMS and Combined Cost Map Approach for High-Efficiency Series Hybrid Electric Vehicles**
Sezer V., GOKASAN M., Bogosyan S.
IEEE TRANSACTIONS ON VEHICULAR TECHNOLOGY, vol.60, no.8, pp.3557-3570, 2011 (Journal Indexed in SCI)
- VII. **Framework for development of driver adaptive warning and assistance systems that will be triggered by a driver inattention monitor**
Aytekin B., DINC MEN E., GUEVENC B. A. , Altuğ E., GUEVENC L., Danis S., Acarman T., SEZER V., ARARAT O., Oencue S.
INTERNATIONAL JOURNAL OF VEHICLE DESIGN, vol.52, pp.20-37, 2010 (Journal Indexed in SCI)
- VIII. **Propulsion system design of a hybrid electric vehicle**
Uygan I. M. C. , HARTAVI A. E. , GUEVENC L., Sezer V., Acarman T.
INTERNATIONAL JOURNAL OF VEHICLE DESIGN, vol.52, pp.96-118, 2010 (Journal Indexed in SCI)

Articles Published in Other Journals

- I. **Motion Planning and Control with Randomized Payloads on Real Robot Using Deep Reinforcement Learning**
Demir A., Sezer V.
INTERNATIONAL JOURNAL OF SEMANTIC COMPUTING, vol.13, no.4, pp.541-563, 2019 (Journal Indexed in ESCI)
- II. **A NOVEL DATA ASSOCIATION TECHNIQUE TO IMPROVE RUN-TIME EFFICIENCY OF SLAM ALGORITHMS**
YENGİN Z. U. , SEZER V.
Eskişehir Technical University Journal of Science and and Technology a- Applied Sciences and Engineering (Online), vol.20, no.2, pp.179-194, 2019 (Refereed Journals of Other Institutions)
- III. **Design of a Semi-Autonomous Electric Wheelchair Controlled by Head Movements**
Sezer V.
Gazi Üniversitesi Fen Bilimleri Dergisi Part C: Tasarım ve Teknoloji, vol.6, pp.221-232, 2018 (International

Refereed University Journal)

IV. Follow the Gap with Dynamic Window Approach

Özdemir A., Sezer V.

INTERNATIONAL JOURNAL OF SEMANTIC COMPUTING, vol.12, no.1, pp.43-57, 2018 (Journal Indexed in ESCI)

V. Metrobüs Şaft Torkunun Sınırlandırılmasına Yönelik Hibrit Güç Aktarma Yapısı ve Güç Yönetim Sistemi Tasarımı

SEZER V.

Gümüşhane Üniversitesi Fen Bilimleri Enstitüsü Dergisi, vol.8, pp.84-95, 2018 (Refereed Journals of Other Institutions)

Books & Book Chapters

I. Unmanned Ground Vehicle Otonobil: Design, Preception and Decision Alorithms

SEZER V., BOYRAZ P., ERCAN Z., dikilitaş ç., heceçoğlu h., ÖNER A., ÖKE GÜNEL G., GÖKAŞAN M.

in: Smart Mobile In Vehicle Systems Next Generation Advancements, Gerhard Schmidt,Hüseyin Abut,Kazuya Takeda,John H.L. Hansen, Editor, Springer, 2014

II. Real-World Data Collection with "UYANIK"

ABUT h., ERDOĞAN h., ERÇİL F. A. , ÇÜRÜKLÜ b., KOMAN h. c. , TAŞ f., ARGÜNŞAH a. ö. , COŞAR s., AKAN b., KARABALKAN h., et al.

in: In Vehicle Corpus and Signal Processing for Driver Behavior, Kazuya Takeda,Hakan Erdoğan,John Hansen,Hüseyin Abut, Editor, Springer, 2009

Refereed Congress / Symposium Publications in Proceedings

I. Motion Planning And Control with Randomized Payloads Using Deep Reinforcement Learning

Demir A., Sezer V.

3rd IEEE International Conference on Robotic Computing (IRC), Naples, Italy, 25 - 27 February 2019, pp.32-37

II. Design and Implementation of Autonomous Parallel and Vertical Parking Mobile Vehicle

kızıl a., koçak s., KUTLUCAN A. C. , doğan c., SEZER V.

6th International Conference on Control Engineering Information Technology, 25 - 27 October 2018

III. Design and Control of a Tennis Ball Collector Robot

çabuk v. u. , şavkan a. k. , kahraman r., karaduman f., kırıl o., SEZER V.

6th International Conference on Control Engineering Information Technology, 25 - 27 October 2018

IV. Intersection Navigation Under Dynamic Constraints Using Deep Reinforcement Learning

demir a., SEZER V.

6th International Conference on Control Engineering Information Technology, 25 - 17 October 2018

V. Design, Implementation and Control of Dual Axis Self Balancing Inverted Pendulum using Reaction Wheels

TÜRKMEN A., Korkut M. Y. , ERDEM M., GÖNÜL Ö., SEZER V.

ELECO 2017 10th International Conference on Electrical and Electronics Engineering, 30 November - 02 December 2017

VI. Design and Experimental Validation of a Low Cost Autonomous Vehicle Testbed

Erdem M., Demir A., Sezer V.

International Conference on Advances in Automotive Technologies, İstanbul, Turkey, 7 - 11 October 2017, pp.174-178

VII. Yangın Söndüren Otonom Robot Tasarımı Ve Gerçeklemesi

CANBAY D. E. , YOLAL e., ŞAHAN ö. f. , TERZİOĞLU i., SEZER V.

Otomatik Kontrol Ulusal Toplantısı TOK 2017, Turkey, 21 - 23 September 2017

VIII. Kazanç Değiştirmeli Doğrusal Karesel Gauss (LQG) Düzenleyici ile Küre Üzerinde Dengede Duran

Gövde Kontrolü

ERDOĞAN a. c. , PAZARBAŞI a. h. , BOSTAN e. a. , DEMİR m. d. , SEZER V.

Otomatik Kontrol Ulusal Toplantısı TOK 2017, Turkey, 21 - 23 September 2017

- IX. **Reaksiyon Tekerleri ile Kendini İki Eksende Dengeleyebilen Ters Sarkaç Tasarımı, Üretimi ve Kontrolü**
TÜRKMEN A., KORKUT M. Y. , ERDEM M., GÖNÜL Ö., SEZER V.
Otomatik Kontrol Ulusal Toplantısı TOK 2017, Turkey, 21 - 23 September 2017
- X. **Improved Follow the Gap Method for Obstacle Avoidance**
Demir M., Sezer V.
IEEE International Conference on Advanced Intelligent Mechatronics (AIM), Munich, Germany, 3 - 07 July 2017, pp.1435-1440
- XI. **A Hybrid Obstacle Avoidance Method: Follow the gap with dynamic window approach**
Özdemir A., Sezer V.
1st IEEE International Conference on Robotic Computing (IRC), Taichung, Taiwan, 10 - 12 April 2017, pp.257-262
- XII. **Head gesture recognition via dynamic time warping and threshold optimization**
MAVUŞ U., Sezer V.
2017 IEEE Conference on Cognitive and Computational Aspects of Situation Management, CogSIMA 2017, Georgia, United States Of America, 27 - 31 March 2017
- XIII. **Taşıt Grubu Kontrolü Konesnüs Tabanlı Yaklaşım**
BEKE A., SARAĞLU M., KADEM G., CEBE O., GÖKAY R., SEZER V.
Otomatik Kontrol Ulusal Toplantısı TOK 2016, Eskişehir, Turkey, 29 September - 01 October 2016, pp.249-254
- XIV. **Takipçi Robot Tasarımı ve Kontrolü**
GÜZEL M., ONGUN M. A. , KUMURKAN H. H. , BEKAROĞLU Y. T. , ÇİÇEK S., SEZER V.
Otomatik Kontrol Ulusal Toplantısı TOK 2016, Eskişehir, Turkey, 29 September - 01 October 2016, pp.766-771
- XV. **Otonom Tohum Ekici Prototip Tarım Aracı Tasarımı**
ARTUNÇ T. C. , HAVUÇÇUOĞLU F. S. , ASLAN F., AKGÜN N., SEZER V.
Otomatik Kontrol Ulusal Toplantısı TOK 2016, Eskişehir, Turkey, 29 September - 01 October 2016, pp.141-146
- XVI. **Towards Autonomous Navigation of Unsignalized Intersections under Uncertainty of Human Driver Intent**
Sezer V., Bandyopadhyay T., Rus D., FRAZZOLİ E., Hsu D.
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Hamburg, Germany, 28 September - 02 October 2015, pp.3578-3585
- XVII. **3 Eksenli Kafa İzleyici İle Araç İçi Sürüş Hissiyatı Sağlayarak Uzaktan Yönetilebilen Ve Otomatik Düşman Tanıma Yeteneğine Sahip Yarı Otonom Tank Tasarımı**
ERSİN g., ÖZTÜRK m., HALUK ç., SEZER V.
Otomatik Kontrol Ulusal Toplantısı TOK 2015, Turkey, 10 - 12 September 2015
- XVIII. **Kitap Dizinleyen Kütüphane Asistanı Geliştirilmesi**
MAHMUT D., ZENGİN N., HAKAN B., ERDEM A., SEZER V.
Otomatik Kontrol Ulusal Toplantısı TOK 2015, Turkey, 10 - 12 September 2015
- XIX. **Otonom Sürüş ve Nişan Alma Kabiliyetli Paletli Kara Aracı Tasarımı**
GELBAL Ş. Y. , BODUR K., ALTINPINAR O. V. , ŞAHİN K., HOT M., SEZER V.
Otomatik Kontrol Ulusal Toplantısı TOK 2015, Turkey, 10 - 12 September 2015
- XX. **Otonom Kara Taşıtı: Otonobil**
SEZER V., GÖKAŞAN M.
1. Karayolu Akıllı Ulaşım Sistemleri Kongre ve Sergisi, Turkey, 26 - 18 May 2014
- XXI. **A New Fuzzy Speed Control Strategy Considering Lateral Vehicle Dynamics**
Sezer V., Ercan Z., Heceoglu H., Gökaşan M., Bogosyan S.
15th International IEEE Conference on Intelligent Transportation Systems (ITSC), Alaska, United States Of America, 16 - 19 September 2012, pp.19-24
- XXII. **A new fuzzy speed planning method for safe navigation**
Sezer V., Ercan Z., Heceoglu H., Bogosyan S., Gökaşan M.

- 2012 IEEE International Conference on Vehicular Electronics and Safety, ICVES 2012, İstanbul, Turkey, 24 - 27 July 2012, pp.381-386
- XXIII. **Multi-sensor data fusion of DCM based orientation estimation for land vehicles**
Ercan Z., Sezer V., Heceoglu H., Dikilitas C., Göktaşan M., Muğan A., BOĞOSYAN S.
2011 IEEE International Conference on Mechatronics, ICM 2011, İstanbul, Turkey, 13 - 15 April 2011, pp.672-677
- XXIV. **Conversion of a conventional electric automobile into an unmanned ground vehicle (UGV)**
Sezer V., Dikilita C., Ercan Z., HECEOĞLU H., Oner A., APAK A., Göktaşan M., Muğan A.
2011 IEEE International Conference on Mechatronics, ICM 2011, İstanbul, Turkey, 13 - 15 April 2011, pp.564-569
- XXV. **Design and Implementation of a Series Parallel Light Commercial Hybrid Electric Vehicle**
SEZER V., ALİ ÖNDER b., DEMİRCİ m., UÇAROL h., KURAL e., EREN ö., VARLIK k., IRMAK k., YILDIRIM m., HARTAVI KARCI A. E., et al.
The 24th International Battery, Hybrid and Fuel-cell Electric Vehicle Symposium and Exhibition (EVS24), 13 - 16 May 2009
- XXVI. **Electric regenerative power assisted brake algorithm for a front and rear wheel drive parallel hybrid electric commercial van**
Hartavi A. E. , Uygan I. M. , Sezer V., Güvenç L., ACARMAN T., Kiliç V., Yildirim M.
Commercial Vehicle Engineering Congress and Exhibition, Rosemont, IL, United States Of America, 7 - 09 October 2008
- XXVII. **Maximizing overall efficiency strategy (MOES) for power split control of a parallel hybrid electric vehicle**
Sezer V., Uygan I. M. C. , Hartavi A. E. , Güvenç L., Acarman T., KILIÇ V., Yildirim M.
Commercial Vehicle Engineering Congress and Exhibition, Rosemont, IL, United States Of America, 7 - 09 October 2008
- XXVIII. **Signal interfacing for hybrid electric vehicular electronics and an implementation study**
Hartavi A. E. , Uygan I. M. C. , Sezer V., ACARMAN T., Güvenç L., Kiliç V., Yildirim M.
2008 IEEE International Conference on Vehicular Electronics and Safety, ICVES 2008, Columbus, OH, United States Of America, 22 - 24 September 2008, pp.151-156

Supported Projects

Sezer V., Demir A., Kumbasar T., Zengin R. S. , Project Supported by Higher Education Institutions, Servis Robotları İçin Otonom Sürüş Çözümlerinin Geliştirilmesi ve Uygulanması, 2018 - 2019

Sezer V., Project Supported by Higher Education Institutions, TOWARDS AUTONOMOUS NAVIGATION OF UNSIGNALIZED INTERSECTIONS UNDER UNCERTAINTY OF HUMAN DRIVER INTENT, 2015 - 2018

Scientific Refereeing

TUBITAK Project, March 2018

TUBITAK Project, March 2018

TUBITAK Project, February 2018

TUBITAK Project, February 2018

TUBITAK Project, May 2015

Scientific Consultations

Tekhnelogos A.Ş.:. Scientific Consultancy, İstanbul Teknik Üniversitesi, Elektrik-Elektronik Fakültesi, Kontrol Ve Otomasyon Mühendisliği Bölümü, Turkey, 2017 - Continues

Keating International:. Scientific Consultancy, İstanbul Teknik Üniversitesi, Elektrik-Elektronik Fakültesi, Kontrol Ve

Otomasyon Mühendisliği Bölümü, Turkey, 2017 - 2018

Tekhnologos A.Ş., Scientific Consultancy, İstanbul Teknik Üniversitesi, Elektrik-Elektronik Fakültesi, Kontrol Ve

Otomasyon Mühendisliği Bölümü, Turkey, 2015 - 2017

İstanbul Ulaşım A.Ş., Scientific Consultancy, İstanbul Teknik Üniversitesi, Turkey, 2004 - 2016

Edit Congress and Symposium Activities

TÜRKİYE ROBOTBİLİM KONFERANSI (TORK), Session Moderator, İstanbul, Turkey, 2015

18. Bilgisayar Destekli Mühendislik ve Sistem Modelleme Konferansı, Invited Speaker, İstanbul, Turkey, 2014

Citations

Total Citations (WOS):179

h-index (WOS):5