

Prof. Hatice Köse

Personal Information

Office Phone: [+90 212 285](tel:+90212285) Extension: 6471

Email: hbkose@itu.edu.tr

Other Email: hatice.kose@itu.edu.tr

Web: <http://humanoid.itu.edu.tr/>

International Researcher IDs

ORCID: 0000-0003-4796-4766

Publons / Web Of Science ResearcherID: C-6322-2013

ScopusID: 25031883600

Yoksis Researcher ID: 104329

Education Information

Doctorate, Bogazici University, Faculty Of Engineering, Department Of Computer Engineering, Turkey 2000 - 2007

Postgraduate, Bogazici University, Faculty Of Engineering, Department Of Computer Engineering, Turkey 1997 - 2000

Undergraduate, Bogazici University, Faculty Of Engineering, Department Of Computer Engineering, Turkey 1993 - 1997

Foreign Languages

English

Dissertations

Doctorate, A collaborative multi-robot localization technique for autonomous robots, Boğaziçi Üniversitesi, Mühendislik Fakültesi, Bilgisayar Mühendisliği Bölümü, 2007

Postgraduate, Towards a robust cognitive architecture for autonomous mobile robots, Boğaziçi Üniversitesi, Mühendislik Fakültesi, Bilgisayar Mühendisliği Bölümü, 2000

Research Areas

Technical Sciences, Information Systems, Communication and Control Engineering, Robotics and Mechatronics Systems, Human and Robot Interaction, Humanoid Robots, Computer Sciences, Artificial Intelligence, Computer Learning and Pattern Recognition, Computer Learning, Human Computer Interaction

Academic Titles / Tasks

Professor, Istanbul Technical University, Bilgisayar ve Bilişim, Yapay Zeka Ve Veri Mühendisliği, 2021 - Continues

Associate Professor, Istanbul Technical University, Bilgisayar ve Bilişim, Bilgisayar Mühendisliği, 2017 - 2021

Assistant Professor, Istanbul Technical University, Bilgisayar ve Bilişim, Bilgisayar Mühendisliği, 2010 - 2017

Courses

BLG 233E DATA STRUCTURES AND LAB., Undergraduate, 2016 - 2017, 2014 - 2015

Advising Theses

- Köse H., IMPACTS OF SENSORY VISUAL EFFECTS ON GAMERS' SPATIAL EXPLORATION BEHAVIOR, Postgraduate, B.KORAY(Student), 2022
- Köse H., Statistical feature learning and signal generation for time-series sensor signals, Doctorate, E.KARAKUŞ(Student), 2022
- Köse H., Alaçam S., Object manipulation through intuitive hand gestures in virtual reality: The relation between objects' spatial properties and gestures, Postgraduate, E.SIRDAŞ(Student), 2022
- Köse H., AUGMENTED REALITY APPLICATION IN EDUCATION OF CHILDREN WITH AUTISM, Postgraduate, O.KORUCU(Student), 2022
- Köse H., A serious game using virtual reality and augmented reality in a driving license test, Postgraduate, T.AVŞAR(Student), 2021
- Köse H., Development of adaptive human-computer interaction games to evaluate attention, Postgraduate, H.KANDEMİR(Student), 2018
- Köse H., Yazılı Türkçe Dilinden Türk İşaret Diline (TID) Makine Çevirisi Sistemi, Doctorate, C.Eryigit(Student), 2017
- Köse H., Robot and avatar based interactive system for children's education, Postgraduate, R.yorgancı(Student), 2016
- Köse H., Gesture recognition for humanoid robot assisted interactive sign language tutoring, Postgraduate, B.Sitki(Student), 2014
- Köse H., Assistant humanoid robots for sign language tutoring, Postgraduate, N.Akalın(Student), 2014
- Köse H., İşaret dili hareketlerinin bir insansı robot tarafından taklit yoluyla gerçekleşmesi ve öğrenilmesi, Postgraduate, H.Kivrak(Student), 2013

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Experience with an Affective Robot Assistant for Children with Hearing Disabilities**
Uluer P., Köse H., Gümüşlu E., Erol Barkana D.
INTERNATIONAL JOURNAL OF SOCIAL ROBOTICS, vol.15, no.4, pp.643-660, 2023 (SCI-Expanded)
- II. **Contrastive learning based facial action unit detection in children with hearing impairment for a socially assistive robot platform?**
Gurpinar C., Takır Ş., Biçer E., ULUER P., ARICA N., Köse H.
IMAGE AND VISION COMPUTING, vol.128, 2022 (SCI-Expanded)
- III. **Waypoint based path planner for socially aware robot navigation**
Kivrak H., ÇAKMAK F., Köse H., YAVUZ S.
CLUSTER COMPUTING-THE JOURNAL OF NETWORKS SOFTWARE TOOLS AND APPLICATIONS, vol.25, no.3, pp.1665-1675, 2022 (SCI-Expanded)
- IV. **Automatic Emotion Recognition in Children with Autism: A Systematic Literature Review**
Landowska A., Karpus A., Zawadzka T., Robins B., EROL BARKANA D., Köse H., Zorcec T., Cummins N.
SENSORS, vol.22, no.4, 2022 (SCI-Expanded)
- V. **Development of adaptive human-computer interaction games to evaluate attention**
Kandemir H., Köse H.
ROBOTICA, vol.40, no.1, pp.56-76, 2022 (SCI-Expanded)
- VI. **An audiovisual interface-based drumming system for multimodal human-robot interaction**
İnce G., Yorgancı R., Ozkul A., Duman T. B., Köse H.
JOURNAL ON MULTIMODAL USER INTERFACES, vol.15, no.4, pp.413-428, 2021 (SCI-Expanded)
- VII. **Social navigation framework for assistive robots in human inhabited unknown environments**
KIVRAK H., ÇAKMAK F., Köse H., YAVUZ S.
Engineering Science and Technology, an International Journal, vol.24, pp.284-298, 2021 (SCI-Expanded)

- VIII. **Robot-Based Intervention for Children With Autism Spectrum Disorder: A Systematic Literature Review**
Bartl-Pokorny K. D., Pykala M., ULUER P., Barkana D. E., Baird A., Köse H., Zorcec T., Robins B., Schuller B. W., Landowska A.
IEEE ACCESS, vol.9, pp.165433-165450, 2021 (SCI-Expanded)
- IX. **Conditional restricted Boltzmann machine as a generative model for body-worn sensor signals**
Karakus E., Köse H.
IET SIGNAL PROCESSING, vol.14, no.10, pp.725-736, 2020 (SCI-Expanded)
- X. **Sign Recognition System for an Assistive Robot Sign Tutor for Children**
Gurpinar C., Uluer P., Akalin N., Köse H.
INTERNATIONAL JOURNAL OF SOCIAL ROBOTICS, vol.12, no.2, pp.355-369, 2020 (SCI-Expanded)
- XI. **Building the first comprehensive machine-readable Turkish sign language resource: methods, challenges and solutions**
Eryiğit G., Eryiğit G., Karabuklu S., KELEPİR WOOD M., Ozkul A., Pamay Arslan T., Torunoğlu Selamet D., Köse H.
LANGUAGE RESOURCES AND EVALUATION, vol.54, no.1, pp.97-121, 2020 (SCI-Expanded)
- XII. **Improving human-robot interaction based on joint attention**
Dağlarlı E., DAGLARLI S. F., Gunel G. O., Köse H.
APPLIED INTELLIGENCE, vol.47, no.1, pp.62-82, 2017 (SCI-Expanded)
- XIII. **Building machine-readable knowledge representations for Turkish sign language generation**
Eryigit C., Köse H., Kelepir M., ERYIGIT G.
KNOWLEDGE-BASED SYSTEMS, vol.108, pp.179-194, 2016 (SCI-Expanded)
- XIV. **Joint Attention Using Human Robot Interaction**
Dağlarlı E., Dağlarlı S. F., ÖKE GÜNEL G., KÖSE H.
Journal of Applied Intelligence, vol.0, 2016 (SCI-Expanded)
- XV. **The Effect of Embodiment in Sign Language Tutoring with Assistive Humanoid Robots**
Kose H., ULUER P., AKALIN N., YORGANCI R., OZKUL A., INCE G.
INTERNATIONAL JOURNAL OF SOCIAL ROBOTICS, vol.7, no.4, pp.537-548, 2015 (SCI-Expanded)
- XVI. **Can Real-Time, Adaptive Human-Robot Motor Coordination Improve Humans' Overall Perception of a Robot?**
Shen Q., Dautenhahn K., Saunders J., Köse H.
IEEE TRANSACTIONS ON AUTONOMOUS MENTAL DEVELOPMENT, vol.7, no.1, pp.52-64, 2015 (SCI-Expanded)
- XVII. **Socially Interactive Robotic Platforms as Sign Language Tutors**
Köse H., AKALIN N., ULUER P.
INTERNATIONAL JOURNAL OF HUMANOID ROBOTICS, vol.11, no.1, 2014 (SCI-Expanded)
- XVIII. **Evaluation of the Robot Assisted Sign Language Tutoring Using Video-Based Studies**
Köse H., YORGANCI R., ALGAN E. H., Syrdal D. S.
INTERNATIONAL JOURNAL OF SOCIAL ROBOTICS, vol.4, no.3, pp.273-283, 2012 (SCI-Expanded)
- XIX. **The Impact of Participants' Beliefs on Motor Interference and Motor Coordination in Human-Humanoid Interactions**
Shen Q., Kose-Bagci H., Saunders J., Dautenhahn K.
IEEE TRANSACTIONS ON AUTONOMOUS MENTAL DEVELOPMENT, vol.3, no.1, pp.6-16, 2011 (SCI-Expanded)
- XX. **Drum-mate: interaction dynamics and gestures in human-humanoid drumming experiments**
Kose-Bagci H., Dautenhahn K., Syrdal D. S., Nehaniv C. L.
CONNECTION SCIENCE, vol.22, no.2, pp.103-134, 2010 (SCI-Expanded)
- XXI. **Effects of Embodiment and Gestures on Social Interaction in Drumming Games with a Humanoid Robot**
Kose-Bagci H., Ferrari E., Dautenhahn K., Syrdal D. S., Nehaniv C. L.
ADVANCED ROBOTICS, vol.23, no.14, pp.1951-1996, 2009 (SCI-Expanded)
- XXII. **KASPAR - a minimally expressive humanoid robot for human-robot interaction research**
Dautenhahn K., Nehaniv C. L., Walters M. L., Robins B., Kose-Bagci H., Mirza N. A., Blow M.
Applied Bionics and Biomechanics, vol.6, pp.369-397, 2009 (SCI-Expanded)

- XXIII. **The reverse Monte Carlo localization algorithm**
 Kose H., AKIN H. L.
 ROBOTICS AND AUTONOMOUS SYSTEMS, vol.55, no.6, pp.480-489, 2007 (SCI-Expanded)
- XXIV. **Comparison of Localization Methods for a Robot Soccer Team**
 Köse H.
 INTERNATIONAL JOURNAL OF ADVANCED ROBOTIC SYSTEMS, vol.3, no.4, pp.1-0, 2006 (SCI-Expanded)

Articles Published in Other Journals

- I. **A Drumming Based Multimodal Mobile Game Interface**
 Özkul A., KÖSE H., Yorgancı R., İNCE G.
 International Journal of Intelligent Systems and Applications in Engineering, vol.8, no.1, pp.6-10, 2020 (Scopus)
- II. **Interaction Histories and Short-Term Memory: Enactive Development of Turn-Taking Behaviours in a Childlike Humanoid Robot**
 Broz f., Nehaniv C. L., KÖSE H., Dautenhahn K.
 Philosophies, vol.4, no.2, pp.26, 2019 (ESCI)
- III. **Design of an Electronic Chest-Band**
 ATAKAN R., AÇIKGÖZ H., BAŞKAN H., ERYÜRKÜ S. H., AKALIN N., KÖSE H., Li Y., KURŞUN BAHADIR S., KALAOĞLU F.
 IOP Conference Series: Materials Science and Engineering, vol.254, pp.72002, 2017 (Scopus)
- IV. **Running functional sport vest and short for e-textile applications**
 BAŞKAN H., AÇIKGÖZ H., ATAKAN R., ERYÜRKÜ S. H., AKALIN N., KÖSE H., Li Y., KURŞUN BAHADIR S., KALAOĞLU F.
 IOP Conference Series: Materials Science and Engineering, vol.254, pp.72004, 2017 (Scopus)
- V. **Interactive Games with an Assistive Robotic System for Hearing-Impaired Children**
 Uluer P., Akalin N., GURPINAR C., Köse H.
 Studies in Health Technology and Informatics, vol.242, pp.298-305, 2017 (Scopus)
- VI. **iSign: An Architecture for Humanoid Assisted Sign Language Tutoring**
 Köse H., Akalin N., Yorgancı R., Ertugrul B. S., Kivrak H., Kavak S., Ozkul A., Gurpinar C., Uluer P., İnce G.
 INTELLIGENT ASSISTIVE ROBOTS: RECENT ADVANCES IN ASSISTIVE ROBOTICS FOR EVERYDAY ACTIVITIES,
 vol.106, pp.157-184, 2015 (Scopus)

Books & Book Chapters

- I. **A New Data Collection Interface for Dynamic Sign Language Recognition with Leap Motion Sensor**
 DEMİRCİOĞLU KAM B., KÖSE H.
 in: Game + Design Education. Springer Series in Design and Innovation, Cordan Ö., Dinçay D.A., Yurdakul Toker Ç., Öksüz E.B., Semizoğlu S., Editor, Springer, Cham, pp.353-361, 2021
- II. **Audio Centered Game Development in Mobile VR**
 SEFERCİOĞLU E. N., KÖSE H.
 in: Game + Design Education - Proceedings of PUDCAD 2020, Cordan Özge, Dinçay Demet Arslan, Toker Çağıl Yurdakul, Öksüz Elif Belkis, Semizoğlu Sena, Editor, Springer International Publishing, pp.217-232, 2021
- III. **The uses of technology in L1 and L2/Ln sign language pedagogy**
 KÖSE H., ULUER P.
 in: The Routledge Handbook of Sign Language Pedagogy, Russel S. Rosen, Editor, Routledge, pp.323-338, 2019
- IV. **Enriching the Human-Robot Interaction Loop with Natural, Semantic, and Symbolic Gestures**
 LOHAN K. S., LEHMANN H., DONDRUP C., BROZ f., KÖSE H.
 in: Humanoid Robotics: A Reference, Goswami A., Vadakkepat P, Editor, Springer, Dordrecht, pp.2199-2219, 2018
- V. **İnsansı Robot Destekli İnteraktif Türk İşaret Dili Eğitimi**
 KÖSE H., ULUER P., AKALIN N.
 in: Ellerle Konuşmak Türk İşaret Dili Araştırmaları, Engin Arik, Editor, Koç Üniversitesi Yayın Evi, İstanbul, pp.499-

- VI. **iSign: Humanoid Assisted Sign Language Tutoring for Children**
 KÖSE H., Akalın N., ULUER P., OZKUL A., YORGANCI R., GURPINAR C., KAVAK S., ERTUĞRUL B. S., KIVRAK H., İNCE G.
 in: Intelligent Assistive Robots Recent advances in assistive robotics for everyday activities series Springer Tracts
 in Advanced Robotics, Mohammed, S., Moreno, J.C., Kong, K., Amirat, Y., Editor, Springer, pp.157-184, 2015

Refereed Congress / Symposium Publications in Proceedings

- I. **Social Robot Navigation with Adaptive Proxemics Based on Emotions**
 Bilen B., Kivrak H., Uluer P., Köse H.
 Workshop on Towards Socially Intelligent Robots In Real World Applications: Challenges And Intricacies (SIRRW)
 in 31st IEEE International Conference on Robot and Human Interactive Communication (RO-MAN 2022), Naples,
 Italy, 24 August 2022
- II. **Statistical Feature Learning and Signal Generation for Sensor Signals**
 Karakuş E., KÖSE H., ÖZEN F.
 International Graduate Research Symposium, İstanbul, Turkey, 1 - 03 June 2022
- III. **Stress Detection of Children with Autism using Physiological Signals in Kaspar Robot-Based Intervention Studies**
 Coskun B., ULUER P., Toprak E., Barkana D. E., Köse H., Zorcec T., Robins B., Landowska A.
 9th IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechatronics, BioRob 2022, Seoul,
 South Korea, 21 - 24 August 2022, vol.2022-August
- IV. **Stress Detection of Children With ASD Using Physiological Signals Fizyolojik Sinyaller Kullanılarak Otizmeli Çocuklarda Stres Tanıma**
 Aktas S. N. B., ULUER P., Coskun B., Toprak E., Barkana D. E., Köse H., Zorcec T., Robins B., Landowska A.
 30th Signal Processing and Communications Applications Conference, SIU 2022, Safranbolu, Turkey, 15 - 18 May
 2022
- V. **Masking and Compression Techniques for Efficient Action Unit Detection of Children for Social Robots Sosyal Robotlar için Çocuklarda Yüz Eylem Birimi Tespitinde Maskeleme ve Sıkıştırma Teknikleri**
 Biçer E., Takır Ş., Gurpinar C., ULUER P., Köse H.
 30th Signal Processing and Communications Applications Conference, SIU 2022, Safranbolu, Turkey, 15 - 18 May
 2022
- VI. **Facial Expressions Detection of Children with Hearing Impairment İşitme Engelli Çocukların Yüz Ifadeleri Tespiti**
 Bozkurt M., Öncel F., Gurpinar C., Köse H., Ünal G.
 30th Signal Processing and Communications Applications Conference, SIU 2022, Safranbolu, Turkey, 15 - 18 May
 2022
- VII. **A New Facial Expression Processing System for an Affectively Aware Robot**
 Bağlayıcı E., gürpinar c., ULUER P., KÖSE H.
 In: Del Bimbo A. et al. (eds) Pattern Recognition. ICPR International Workshops and Challenges. ICPR 2021.
 Lecture Notes in Computer Science, Milan, Italy, 10 January 2021, vol.12662
- VIII. **Emotion Recognition using EEG and Physiological Data for Robot-Assisted Rehabilitation Systems**
 Gümüşlü E., EROL BARKANA D., KÖSE H.
 22nd ACM International Conference on Multimodal Interaction (ICMI) Workshop on Modeling Socio-Emotional
 and Cognitive Processes from Multimodal Data in the Wild, Netherlands, 25 October 2020
- IX. **Physiological Data-Based Evaluation of a Social Robot Navigation System**
 KIVRAK H., ULUER P., KÖSE H., Gümüşlü E., EROL BARKANA D., ÇAKMAK F., YAVUZ S.
 2020 29th IEEE International Conference on Robot and Human Interactive Communication (RO-MAN), Naples,
 Italy, 31 August - 04 September 2020
- X. **Towards An Affective Robot Companion for Audiology Rehabilitation: How Does Pepper Feel Today?**

- ULUER P., KÖSE H., Öz B. K., Aydinalev T. C., EROL BARKANA D.
 2020 29th IEEE International Conference on Robot and Human Interactive Communication (RO-MAN), Naples, Italy, 31 August - 04 September 2020
- XI. **A multilevel mapping based pedestrian model for social robot navigation tasks in unknown human environments**
 KIVRAK H., ÇAKMAK F., Köse H., YAVUZ S.
 2020 International Conference on INnovations in Intelligent SysTems and Applications, INISTA 2020, Novi-Sad, Serbia, 24 - 26 August 2020
- XII. **Socially Aware Robot Navigation Using the Collision Prediction Based Pedestrian Model**
 KIVRAK H., ÇAKMAK F., KÖSE H., YAVUZ S.
 Workshop on Robotic Co-workers 4.0: Human Safety and Comfort in Human-Robot Interactive Social Environments 2018 IEEE/RSJ International Conference on Intelligent Robots and Systems, Madrid, Spain, 1 - 05 October 2018
- XIII. **Emotion recognition in valence-arousal scale by using physiological signals Fizyolojik sinyaller kullanilarak duygularinin değerlik aktivasyon düzleminde taninması**
 Akalin N., Köse H.
 26th IEEE Signal Processing and Communications Applications Conference, SIU 2018, İzmir, Turkey, 2 - 05 May 2018, pp.1-4
- XIV. **Controlling a robot with extraocular muscles using EEG device**
 DEMİREL ç., KANDEMİR h., KÖSE H.
 26th Signal Processing and Communications Applications Conference (SIU), İzmir, Turkey, 2 - 05 May 2018, pp.1-4
- XV. **Rule based assessment of hearing-impaired children's facial expressions İsitme Engelli Çocukların Yüz Ifadelerinin Kural Tabanlı Değerlendirilmesi**
 AYDINALEV T. C., BAYHAN B. B., Köse H.
 26th IEEE Signal Processing and Communications Applications Conference, SIU 2018, İzmir, Turkey, 2 - 05 May 2018, pp.1-4
- XVI. **Social robot navigation in human-robot interactive environments: Social force model approach**
Insan-Robot Etkileşimli Ortamlarda Sosyal Robot Gezinmesi: Sosyal Kuvvet Modeli Yaklaşımı
 Kivrak H., Köse H.
 26th IEEE Signal Processing and Communications Applications Conference, SIU 2018, İzmir, Turkey, 2 - 05 May 2018, pp.1-4
- XVII. **Emotion Recognition in Valence-Arousal Scale by Using Physiological Signals**
 Akalin N., Köse H.
 26th IEEE Signal Processing and Communications Applications Conference (SIU), İzmir, Turkey, 2 - 05 May 2018
- XVIII. **Social Robot Navigation In Human-Robot Interactive Environments: Social Force Model Approach**
 Kivrak H., Köse H.
 26th IEEE Signal Processing and Communications Applications Conference (SIU), İzmir, Turkey, 2 - 05 May 2018
- XIX. **Rule Based Assessment of Hearing-Impaired Children's Facial Expressions**
 Aydinalev T. C., Bayhan B. B., Köse H.
 26th IEEE Signal Processing and Communications Applications Conference (SIU), İzmir, Turkey, 2 - 05 May 2018
- XX. **Interactive Games with an Assistive Robotic System for Hearing-Impaired Children**
 ULUER P., AKALIN N., gürpınar c., KÖSE H.
 14th European Conference on the Advancement of Assistive Technology, Sheffield, United Kingdom, 12 - 15 September 2017, vol.242, pp.298-305
- XXI. **Design of a thermal waistpad**
 Açıkgoz Tufan H., Atakan R., Başkan H., Eryürük S. H., Akalin N., Köse H., Li Y., Kurşun Bahadır S., Kalaoğlu F.
 AUTEX 2017, Corfu, Greece, 29 - 31 May 2017, pp.1-6

Supported Projects

Köse H., H2020 Project, ETexWeld Welding of E Textiles for Interactive Clothing, 2015 - Continues
Köse H., H2020 Project, Play for children with disabilities LUDI cost Action 1309, 2014 - Continues
Köse H., TUBITAK Project, Roborehab: Yardımcı Odyoloji Rehabilitasyon Robotu, 2018 - 2020
Köse H., Project Supported by Higher Education Institutions, İşitme engelli çocuklar için Robot ve Avatar bazlı etkileşimli oyun platformu, 2016 - 2019
Köse H., Project Supported by Higher Education Institutions, İŞARET DİLİ EĞİTİMİNDE BİR YARDIMCI ROBOT SİSTEMİ UYGULAMASI, 2015 - 2018
Köse H., Project Supported by Higher Education Institutions, Robotun Hikayesi: İnsansı Robot Yardımı ile İşaret Dili eğitimi, 2011 - 2018
Köse H., TUBITAK Project, Türkçe Den Türk İşaret Diline Otomatik Çeviri Sistemi Ve Avatar Animasyonu, 2014 - 2016
Köse H., Project Supported by Higher Education Institutions, Yazılı Türkçe Dilinden Türk İşaret Diline (TİD) Makine Çevirisi Sistemi, 2014 - 2016
Köse H., TUBITAK Project, Robot İşaret Dili Öğretmeni, 2012 - 2015
Köse H., Project Supported by Higher Education Institutions, İşitme Engeliller İçin Robot İşaret Dili Öğretmeni, 2011 - 2012

Activities in Scientific Journals

İTÜ Computer Science AI and Robotics (ITU-CSAR), First Editor, 2022 - Continues

Metrics

Publication: 99
Citation (WoS): 180
Citation (Scopus): 736
H-Index (WoS): 8
H-Index (Scopus): 12