

# **Prof. HALUK KÜÇÜK**

## **Personal Information**

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## **International Researcher IDs**

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Publons / Web Of Science ResearcherID: AAD-2003-2020

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## **Biography**

Haluk Kucuk received the B.S. degree in Mechanical Engineering and the M.S. degree in Management Engineering from Istanbul Technical University, Istanbul, Turkey, in 1993 and 1995, respectively. He received the M.S. degree in Mechanical Engineering from Bogazici University, Istanbul, in 1995, and the Ph.D. degree in Mechanical Engineering–Engineering Mechanics from Michigan Technological University, USA in 1999.

He is currently a Professor with Faculty of Engineering, Department of Electrical-Electronics Engineering, Marmara University, Istanbul. His research interests are robotics and machine learning.

## **Education Information**

Doctorate, Michigan Technological University, Mühendislik Fakültesi, Makine Mühendisliği, United States Of America 1995 - 1999

Postgraduate, Istanbul Technical University, İşletme Fakültesi, İşletme Mühendisliği Bölümü, Turkey 1993 - 1995

Postgraduate, Bogazici University, Faculty Of Engineering, Makine Mühendisliği (YI) (Tezli), Turkey 1993 - 1995

Undergraduate, Istanbul Technical University, Makine Fakültesi, Makine Mühendisliği Bölümü, Turkey 1989 - 1993

## **Dissertations**

Doctorate, Vision Based Path Planning For Flexible Link Robotics, Michigan Technological University, Makine Mühendisliği, 1999

Postgraduate, Otomasyon yönetiminde insan faktörü ve Türk Otomotiv Sektöründe bir uygulama, İstanbul Teknik Üniversitesi, İşletme Fakültesi, İşletme Mühendisliği Bölümü, 1995

Postgraduate, A Two dimensional dynamic model simulation of human knee joint, Boğaziçi Üniversitesi, Mühendislik Fakültesi, Makine Mühendisliği (YI) (Tezli), 1995

## **Research Areas**

Computer Learning, Robotics

## **Academic Titles / Tasks**

Professor, Marmara University, Faculty of Engineering, Elektrik-Elektronik Mühendisliği Bölümü, 2017 - Continues  
Professor, Marmara University, Faculty of Technology, Mechatronic Engineering, 2013 - 2017  
Associate Professor, Marmara University, Faculty of Technology, Mechatronic Engineering, 2010 - 2013  
Associate Professor, Marmara University, Faculty of Technical Education, Mechatronic Education, 2008 - 2010  
Assistant Professor, Marmara University, Faculty of Technical Education, Mechatronic Education, 2005 - 2008  
Assistant Professor, Niğde Üniversitesi, Mühendislik Fakültesi, Makine Mühendisliği Bölümü, 2001 - 2005  
Research Assistant, Niğde Üniversitesi, Mühendislik Fakültesi, Makine Mühendisliği Bölümü, 1994 - 2001

## **Academic and Administrative Experience**

Marmara University, Faculty of Engineering, Elektrik-Elektronik Mühendisliği Bölümü, 2017 - Continues  
Marmara University, Faculty of Technology, Mechatronic Engineering, 2011 - 2017  
Marmara University, Faculty of Technology, Mechatronic Engineering, 2010 - 2011  
Marmara University, Faculty of Technical Education, Mechatronic Education, 2005 - 2006  
Niğde Üniversitesi, Mühendislik Fakültesi, Makine Mühendisliği Bölümü, 2003 - 2005  
Niğde Üniversitesi, Mühendislik Fakültesi, Makine Mühendisliği Bölümü, 2002 - 2005

## **Advising Theses**

KÜÇÜK H., Driver profiling using long short term memory (lstm) and convolutional neural network (cnn) methods, Postgraduate, A.Cura(Student), 2019  
ONAT M., KÜÇÜK H., Sinyal işleme ve genetik-yapay sinir ağları ile rulman arızalarının teşhis, Doctorate, M.Ünal(Student), 2014  
KÜÇÜK H., Görüntü işleme metodu ile robotik beslemeli çok amaçlı multieksen cnc tezgah tasarımları ve uygulaması, Postgraduate, Z.Sezen(Student), 2013  
KÜÇÜK H., Düşük ayak hastalığına yönelik elektrik stimulatörü geliştirilmesi, Postgraduate, M.Alınbay(Student), 2013  
KÜÇÜK H., Tele-robotik haptik bir tutucu sistem tasarımı, Postgraduate, A.Aker(Student), 2011  
KÜÇÜK H., Küçük H., Otomobil elektrikli direksiyon sisteminin modellenmesi ve duyarlılık analizi, Postgraduate, Ş.Balcı(Student), 2010  
KÜÇÜK H., Servo kontrollü bir süspansiyon sistemi geliştirilmesi, Postgraduate, E.Aziz(Student), 2010  
KÜÇÜK H., Doğal atık destekli kompozit malzeme geliştirilmesi, Postgraduate, S.Çelebi(Student), 2010  
KÜÇÜK H., Düz tabanlık tedavisinde lateral kolon uzatma için tasarlanmış yeni bir implantın sonlu elemanlar analizi ile biyomekanik değerlendirilmesi, Postgraduate, Ö.Özcan(Student), 2009  
KÜÇÜK H., Modüler EIB sisteminin labview ile gerçek zamanlı ve web tabanlı kontrolü, Postgraduate, S.İleri(Student), 2009  
KÜÇÜK H., Küçük H., Eğitim amaçlı bilgisayar kontrollü dizel motor test ünitesi geliştirilmesi, Postgraduate, A.Mert(Student), 2009  
KÜÇÜK H., Küçük H., Solunum yetmezliğinde diyafram pacemaker sistemi, Postgraduate, S.Vatansever(Student), 2009  
Kuzucuoğlu A. E., Küçük H., Escherichia coli bakterisinin görüntü işleme teknikleriyle belirlenmesi, Postgraduate, D.Tok(Student), 2009  
KÜÇÜK H., Diagnosing the cause of the bearing defects by means of signal analysis of online vibro-acoustic records, Postgraduate, S.Tolga(Student), 2008  
KÜÇÜK H., Robotik sistemlerde görüntü işleme, Postgraduate, E.Erpolut(Student), 2008  
KÜÇÜK H., Endüstriyel çay-yaprak-fiber atıklarının ses yutum özelliklerinin incelenmesi, Postgraduate, S.Ersoy(Student), 2007

## **Published journal articles indexed by SCI, SSCI, and AHCI**

- I. Driver Profiling Using Long Short Term Memory (LSTM) and Convolutional Neural Network (CNN) Methods**  
Cura A., KÜÇÜK H., Ergen E., Oksuzoglu I. B.  
IEEE TRANSACTIONS ON INTELLIGENT TRANSPORTATION SYSTEMS, vol.22, no.10, pp.6572-6582, 2021 (SCI-Expanded)
- II. Design, Fabrication and Vision Based Operational Analysis of Novel Shape Memory Alloy Micro Grippers**  
Yurtsever Ö., KÜÇÜK H.  
International Journal of Precision Engineering and Manufacturing, vol.21, no.9, pp.1697-1716, 2020 (SCI-Expanded)
- III. Fault Diagnosis of Bevel Gears Using Neural Pattern Recognition and MLP Neural Network Algorithms**  
Kelesoglu C., KÜÇÜK H., Demetgul M.  
INTERNATIONAL JOURNAL OF PRECISION ENGINEERING AND MANUFACTURING, vol.21, no.5, pp.843-856, 2020 (SCI-Expanded)
- IV. Fault Diagnosis of Rolling Bearings Using Data Mining Techniques and Boosting**  
Ünal M., Sahin Y., Onat M., Demetgul M., Küçük H.  
JOURNAL OF DYNAMIC SYSTEMS MEASUREMENT AND CONTROL-TRANSACTIONS OF THE ASME, vol.139, no.2, 2017 (SCI-Expanded)
- V. Fault diagnosis of rolling bearings using a genetic algorithm optimized neural network**  
Ünal M., Onat M., Demetgul M., Küçük H.  
MEASUREMENT, vol.58, pp.187-196, 2014 (SCI-Expanded)
- VI. Acoustic Properties of Waste Particle Mixed Polyurethane Composites**  
Kucuk H.  
CELLULAR POLYMERS, vol.33, no.4, pp.171-188, 2014 (SCI-Expanded)
- VII. Adaptive on-line parameter identification of a steer-by-wire system**  
Cetin A. E., ADLI M. A., EROL BARKANA D., KÜÇÜK H.  
MECHATRONICS, vol.22, no.2, pp.152-166, 2012 (SCI-Expanded)
- VIII. Acoustic Properties of Tea-Leaf Fiber Mixed Polyurethane Composites**  
Celebi S., KÜÇÜK H.  
CELLULAR POLYMERS, vol.31, no.5, pp.241-255, 2012 (SCI-Expanded)
- IX. Improving Sound Absorption Property of Polyurethane Foams by Adding Tea-Leaf Fibers**  
EKİCİ B., KENTLİ A., KÜÇÜK H.  
ARCHIVES OF ACOUSTICS, vol.37, no.4, pp.515-520, 2012 (SCI-Expanded)
- X. Evaluation of Sound Absorption, Printability, and Some Mechanical Properties of Thin Recycled Cellulosic Sheets Containing Wool, Ceramic Fiber, and Cotton Dust**  
Karademir A., YENİDOĞAN S., AYDEMİR C., KÜÇÜK H.  
INTERNATIONAL JOURNAL OF POLYMERIC MATERIALS, vol.61, no.5, pp.357-370, 2012 (SCI-Expanded)
- XI. THERMAL CONDUCTIVITY AND ACOUSTIC PROPERTIES OF NATURAL FIBER MIXED POLYURETHANE COMPOSITES**  
BÜYÜKAKINCI B. Y., Sokmen N., KÜÇÜK H.  
TEKSTİL VE KONFEKSIYON, vol.21, no.2, pp.124-132, 2011 (SCI-Expanded)
- XII. Implementation and Development of an Adaptive Steering-Control System**  
Cetin A. E., Adli M. A., EROL BARKANA D., KÜÇÜK H.  
IEEE TRANSACTIONS ON VEHICULAR TECHNOLOGY, vol.59, no.1, pp.75-83, 2010 (SCI-Expanded)
- XIII. Investigation of industrial tea-leaf-fibre waste material for its sound absorption properties**  
Ersoy S., Küçük H.  
APPLIED ACOUSTICS, vol.70, pp.215-220, 2009 (SCI-Expanded)
- XIV. Electronic Spectra and High-Resolution B-type Delayed Fluorescence of Salicylidene-m-bromo-aniline in Hexane**  
BAYRAKÇEKEN F., KÜÇÜK H.

## Articles Published in Other Journals

- I. **Fault Diagnosis of Rolling Bearing Based on Feature Extraction and Neural Network Algorithm**  
Ünal M., Demetgül M., Onat M., Küçük H.  
Recent Advances in Electrical Engineering Series, vol.10, pp.179-185, 2013 (Peer-Reviewed Journal)
- II. **The effect of a new teaching methodology on learning performances of automotive mechatronics students**  
ERSOY S., KÜÇÜK H.  
Procedia-Social and Behavioral Sciences, vol.2, no.2, pp.310-316, 2010 (Peer-Reviewed Journal)

## Refereed Congress / Symposium Publications in Proceedings

- I. **Development of a Dimensions Measurement System Based on Depth Camera for Logistic Applications**  
Al Muallim M. T., KÜÇÜK H., Yilmaz F., Kahraman M.  
11th International Conference on Machine Vision (ICMV), Munich, Germany, 1 - 03 November 2018, vol.11041
- II. **Yapay Sinir Ağları ile Araç Sürüs Profilleme**  
Cura A., KÜÇÜK H., Ergen E., Öksüzoğlu B.  
INTERNATIONAL CONGRESS on ENGINEERING and ARCHITECTURE 14-16 November 2018, Alanya / Turkey , 14 - 16 November 2018, pp.366-375
- III. **Design and Implementation of Multifunctional Gripper and Apparatus, for Robotic-Laparoscopic Surgical and Interventional Radiology**  
Yurtsever Ö., KÜÇÜK H.  
11th European and Global Summit for Clinical Nanomedicine, Targeted Delivery and Precision Medicine – The Building Blocks to Personalized Medicine, 2 - 05 September 2018, pp.192
- IV. **X-Ray Image Processing for Quantification of Bone Age**  
Yiğit A., Akgün E., KÜÇÜK H.  
UMAS, International Engineering Research Symposium, 11-13 September 2017, Düzce, Turkey, 11 September 2017
- V. **Design and Production of a Multi-Axis CNC WorkCenter with a Vision Aided Robotic Part Manipulation System**  
Zeynep A., KÜÇÜK H.  
IATS, 8th International Advanced Technologies Symposium, 19-21 October, 2017, Elazığ, Turkey, 19 October 2017
- VI. **Development of a Novel Monitoring and Control Software for Electronic Device Testing and Analysis Purposes**  
Karadeniz Y., KÜÇÜK H.  
IATS, 8th International Advanced Technologies Symposium, 19-21 October, 2017, Elazığ, Turkey, 19 October 2017
- VII. **Motion Control of Robot by Using 3D Camera**  
Sarıkaya Y., KAPLANOĞLU E., Sansoni G., KÜÇÜK H.  
II. INES International Academic Research Congress, 18-21 October 2017, Alanya, Turkey, 18 October 2017
- VIII. **CONTOUR MATCHING AND PLANAR ALIGNMENT USING OPTIMAL TRANSFORMATION PARAMETERS**  
KÜÇÜK H., Çetin E., ÖZDEMİR Z.  
70th IASTEM International Conference, 19-20 August 2017, Oxford, UK, 19 - 20 August 2017
- IX. **IMU Based Visual Servoing Telerobotic System**  
Kocaman M. A., Erim C., Tiğlı A., Vurgun A., Atak A. S., KÜÇÜK H.  
INESEC International Engineering, Science and Education Conference, Diyarbakır, Turkey, 1 - 03 December 2016, pp.528-534
- X. **Robust and Smooth Colour Tracking by a Tendon Driven Humanoid Neck**

- Türkmen H., Öksüzömer N., YİĞİT C. B., BAYRAKTAR E., KÜÇÜK H., BOYRAZ P.  
 8th International Conference on Image Processing, Wavelet and Applications, 22 - 24 September 2016
- XI. A Device to Measure Joint Angles and Foot Force for Lower Extremity Force Distribution Computations**  
 Onaran E. M., ERTAŞ G., KÜÇÜK H.  
 8th International Conference on Electrical and Electronics Engineering (ELECO), Bursa, Turkey, 28 - 30 November 2013, pp.414-417
- XII. Artificial Tendon Driving System Using Skin Effect**  
 KAPLANOĞLU E., Ayırğa H., KÜÇÜK H.  
 World Congress on Engineering and Computer Science, San-Francisco, Costa Rica, 23 - 25 October 2013, pp.904-905
- XIII. Faults Diagnosis of Bearing by Sound Analysis and Artificial Neural Networks**  
 ÜNAL M., ONAT M., DEMETGÜL M., KÜÇÜK H.  
 7th International Advanced Technologies Symposium (IATS'13), 30 September - 02 October 2013, pp.705-710
- XIV. Fault Diagnosis of Rolling Bearing Based on Feature Extraction and Neural Network Algorithm**  
 ÜNAL M., DEMETGÜL M., ONAT M., KÜÇÜK H.  
 6th WSEAS International Conference on Sensors and Signals, 21 - 23 March 2013, vol.169, pp.179-185
- XV. The effect of a new teaching methodology on learning performances of automotive - mechatronics students**  
 Ersoy S., Küçük H.  
 2nd World Conference on Educational Sciences (WCES-2010), İstanbul, Turkey, 4 - 08 February 2010, vol.2, pp.310-316
- XVI. Image Based Identification of Escherichia coli Bacteria From Its Colony Properties**  
 Tok D., Hacıoğlu H., KÜÇÜK H., KUZUCUOĞLU A. E., BİRİR M.  
 15th International Biomedical Science & Technology Symposium, Güzelyurt, Cyprus (Kktc), 16 - 19 August 2009
- XVII. Compliant Control of Steer-by-Wire Systems**  
 Cetin A. E., Adli M. A., EROL BARKANA D., KÜÇÜK H.  
 IEEE/ASME International Conference on Advanced Intelligent Mechatronics, Singapore, Singapore, 14 - 17 July 2009, pp.636-637
- XVIII. Sound absorption properties of industrial tea-leaf-fiber waste materials**  
 ERSOY S., KÜÇÜK H.  
 36th International Congress and Exhibition on Noise Control Engineering, INTER-NOISE 2007, İstanbul, Turkey, 28 - 31 August 2007, vol.7, pp.4336-4344

## Supported Projects

- Küçük H., Project Supported by Higher Education Institutions, Robotik Laparoskopik Cerrahi ve Girişimsel Radyoloji Alanlarında Kullanılabilecek Multifonksiyonel Robotik Kol Başlıklarının Tasarımı ve Uygulaması, 2017 - 2018
- Küçük H., Project Supported by Higher Education Institutions, Konik Dişlilerde Yapay Sinir Ağrı Yöntemiyle Arıza Teşhis, 2015 - 2016
- Küçük H., Alınbay M., TUBITAK Project, DFES Düşük Ayak Hastalığı İçin Fonksiyonel Elektrik Stimülatörünün Tasarımı ve Uygulanması, 2012 - 2013
- Küçük H., Erol Barkana D., TUBITAK Project, Ortopedik Cerrahi Amaçlı Robotik Sistem, 2008 - 2011

## Patent

- KÜÇÜK H., Trakeostomi Hastaları İçin Bir Konuşma Kapağı, Utility Model, CHAPTER A Human Needs, Standard Registration, 2015

## **Metrics**

Publication: 35

Citation (WoS): 498

Citation (Scopus): 623

H-Index (WoS): 8

H-Index (Scopus): 6