

## Assoc. Prof. AYSUN TAŞYAPI ÇELEBİ

### Personal Information

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### Education Information

Doctorate, Kocaeli University, Fen Bilimleri Enstitüsü, Elektronik Ve Haberleşme Mühendisliği Anabilim Dalı, Turkey 2008 - 2012

Postgraduate, Kocaeli University, Fen Bilimleri Enstitüsü, Elektronik Ve Haberleşme Mühendisliği Anabilim Dalı, Turkey 2006 - 2008

Undergraduate, Kocaeli University, Mühendislik Fakültesi, Elektronik Ve Haberleşme Mühendisliği Bölümü, Turkey 1998 - 2002

### Dissertations

Doctorate, SUALTI GÖRÜNTÜLERİNDE İYİLEŞTİRMEVE HEDEF TESPİTİ, Kocaeli Üniversitesi, Fen Bilimleri Enstitüsü, Elektronik Ve Haberleşme Mühendisliği Anabilim Dalı, 2012

Postgraduate, Biyometrik Tanıma, Kocaeli Üniversitesi, Fen Bilimleri Enstitüsü, Elektronik Ve Haberleşme Mühendisliği Anabilim Dalı, 2008

### Research Areas

Signal Processing, Computer Vision, Artificial Intelligence, Computer Learning and Pattern Recognition

### Academic Titles / Tasks

Assistant Professor, Kocaeli University, Mühendislik Fakültesi, Elektronik Ve Haberleşme Mühendisliği Bölümü, 2018 - Continues

Assistant Professor, Kocaeli University, Elektronik Ve Haberleşme Mühendisliği Bölümü, 2013 - 2018

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

- I. **SIMD-based low bit-depth motion estimation with application to HEVC**  
DUVAR R., KÜÇÜKMANİSA A., AKBULUT O., Celebi A., URHAN O.  
SIGNAL IMAGE AND VIDEO PROCESSING, vol.17, no.4, pp.1449-1456, 2023 (SCI-Expanded)
- II. **A real-time defective pixel detection system for LCDs using deep learning based object detectors**

- ÇELİK A., KÜÇÜKMANİSA A., Sumer A., Celebi A., URHAN O.  
JOURNAL OF INTELLIGENT MANUFACTURING, vol.33, no.4, pp.985-994, 2022 (SCI-Expanded)
- III. **Assessment of the performance of low Bit-Depth representation based motion estimation methods on HEVC**  
Duvar R., KÜÇÜKMANİSA A., AKBULUT O., Celebi A., URHAN O.  
JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, vol.34, no.2, pp.786-799, 2019 (SCI-Expanded)
- IV. **Selective Gray-Coded Bit-Plane-Based Two-Bit Transform and Its Efficient Hardware Architecture for Low-Complexity Motion Estimation**  
CELEBI A., YAVUZ S., ÇELEBİ A., URHAN O.  
IEEE TRANSACTIONS ON CONSUMER ELECTRONICS, vol.64, no.3, pp.259-266, 2018 (SCI-Expanded)
- V. **One-Dimensional Filtering Based Two-Bit Transform and Its Efficient Hardware Architecture for Fast Motion Estimation**  
CELEBI A., YAVUZ S., ÇELEBİ A., URHAN O.  
IEEE TRANSACTIONS ON CONSUMER ELECTRONICS, vol.63, no.4, pp.377-385, 2017 (SCI-Expanded)
- VI. **Two-bit transform using local binary pattern method for low-complexity block motion estimation**  
TAŞYAPI ÇELEBİ A.  
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, vol.25, no.6, pp.4593-4601, 2017 (SCI-Expanded)
- VII. **Fuzzy Fusion Based High Dynamic Range Imaging using Adaptive Histogram Separation**  
CELEBI A., Duvar R., URHAN O.  
IEEE TRANSACTIONS ON CONSUMER ELECTRONICS, vol.61, no.1, pp.119-127, 2015 (SCI-Expanded)
- VIII. **Visual enhancement of underwater images using Empirical Mode Decomposition**  
Celebi A., ERTÜRK S.  
EXPERT SYSTEMS WITH APPLICATIONS, vol.39, no.1, pp.800-805, 2012 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Performance Evaluation of Camera-Based Time to Collision Calculation with Different Detectors&Descriptors**  
Özbek M., Taşyapı Çelebi A.  
Avrupa Bilim ve Teknoloji Dergisi, no.32, pp.56-97, 2021 (Peer-Reviewed Journal)
- II. **Öklit Mesafe Tabanlı Uyarlamalı Filtre Kullanılarak Tuz Biber Gürültüsü Giderimi**  
SÜMER A., TAŞYAPI ÇELEBİ A.  
Düzce Üniversitesi Bilim ve Teknoloji Dergisi, vol.7, pp.445-456, 2019 (Peer-Reviewed Journal)
- III. **Düşük İşlem Yüküne Sahip Hareket Kestirimi için Tümlev İmge Temelli İkileştirme**  
TAŞYAPI ÇELEBİ A., URHAN O.  
Pamukkale Üniversitesi Mühendislik Bilimleri Dergisi, vol.24, no.5, pp.850-856, 2018 (Peer-Reviewed Journal)
- IV. **Hardware Implementation of Local Binary Pattern Based Two-Bit Transform Motion Estimation**  
Yavuz S., ÇELEBİ A., TAŞYAPI ÇELEBİ A., URHAN O.  
International Journal of Electrical and Computer Engineering, 2018 (Scopus)
- V. **Integral image based binarization for low-complexity motion estimation**  
TAŞYAPI ÇELEBİ A., URHAN O.  
PAMUKKALE UNIVERSITY JOURNAL OF ENGINEERING SCIENCES-PAMUKKALE UNIVERSİTESİ MUHENDİSLİK BİLİMLERİ DERGİSİ, vol.24, no.5, pp.850-856, 2018 (ESCI)
- VI. **Görüntü İşleme ile TFT/LCD Panellerde Kalite Kontrolü**  
Taşyapı Çelebi A., Akbulut O., Ertürk A., Urhan O., Güllü M. K., Ertürk S.  
Otomasyon, vol.243, 2012 (Non Peer-Reviewed Journal)

## Refereed Congress / Symposium Publications in Proceedings

- I. **Modeling Camera ISP Pipeline with Deep Learning**  
Erbaş K. U., Çelebi A.  
31st IEEE Conference on Signal Processing and Communications Applications (SIU), İstanbul, Turkey, 5 - 08 July 2023
- II. **Lane Type Classification & Distance Measurement System for Autonomous Vehicle**  
Özen S., Kaya U., Semiz A., Yalçın M. F., Çelebi A.  
31st IEEE Conference on Signal Processing and Communications Applications (SIU), İstanbul, Turkey, 5 - 08 July 2023
- III. **Efficient Hardware Implementation of Real-Time Object Tracking**  
Njuguna J. C., Alabay E., ÇELEBİ A., Çelebi A., Gullu M. K.  
30th Signal Processing and Communications Applications Conference, SIU 2022, Safranbolu, Turkey, 15 - 18 May 2022
- IV. **Field programmable gate arrays implementation of two-point non-uniformity correction and bad pixel replacement algorithms**  
Njuguna J. C., Alabay E., ÇELEBİ A., Çelebi A., Gullu M. K.  
2021 International Conference on INnovations in Intelligent SysTems and Applications, INISTA 2021, Kocaeli, Turkey, 25 - 27 August 2021
- V. **LCD pixel defect detection using shallow CNN based approach**  
ÇELİK A., KÜÇÜKMANİSA A., Sumer A., TAŞYAPI ÇELEBİ A., URHAN O.  
2021 International Conference on INnovations in Intelligent SysTems and Applications, INISTA 2021, Kocaeli, Turkey, 25 - 27 August 2021
- VI. **PCB Solder Pad Defect Detection Using GLCM Features**  
TAŞYAPI ÇELEBİ A., Öz B., Özen S., Çelik A.  
11th International Symposium on Intelligent Manufacturing and Service Systems, Turkey, 10 January 2021
- VII. **Gaussian Filter Based Digital Detail Enhancement in Thermal Images**  
Bozkurt H., Çelebi A.  
29th IEEE Conference on Signal Processing and Communications Applications (SIU), ELECTR NETWORK, 9 - 11 June 2021
- VIII. **Pixel Defect Detection in LCD TV Images using Adaptive Thresholding**  
SÜMER A., ÇELİK A., KÜÇÜKMANİSA A., TAŞYAPI ÇELEBİ A., URHAN O.  
2019 27th Signal Processing and Communications Applications Conference (SIU), Sivas, Turkey, Turkey, 24 - 26 April 2019
- IX. **EEG İşaretlerinde Epilepsi Nöbet Tahmini ve Tespiti için Ampirik Kip Ayrışımı ve Ayrık Dalgacık Dönüşümü Yöntemlerinin Performans Karşılaştırılması**  
ALİYA Z., TAŞYAPI ÇELEBİ A.  
ULUSLARARASI MARMARA FEN VE SOSYAL BİLİMLER KONGRESİ 26-27- 28 NİSAN 2019 KOCAELİ/TÜRKİYE, Kocaeli, Turkey, 26 - 28 April 2019
- X. **Akıllı Araçlarda Görüntü İşleme İle Sürücü Yorgunluk Tespit Sistemi**  
TAŞYAPI ÇELEBİ A.  
4. Uluslararası Bilimsel Araştırmalar Kongresi (UBAK), Yaolova, Turkey, 14 - 17 February 2019
- XI. **LCD Piksel Hatalarının GLCM Öznitelikleri ve SVM ile Tespiti**  
ÇELİK A., AYDIN S., KÜÇÜKMANİSA A., TAŞYAPI ÇELEBİ A., URHAN O.  
Uluslararası Marmara Fen ve Sosyal Bilimler Kongresi-IMASCON 2018, 23 - 25 November 2018
- XII. **Performance analysis of one-bit transform based motion estimation using sparse search on HEVC HEVC'de seyrek arama kullanarak bir-bit dönüşümlü hareket kestiriminin performans analizi**  
Duvar R., KÜÇÜKMANİSA A., AKBULUT O., ÇELEBİ A., URHAN O.  
26th IEEE Signal Processing and Communications Applications Conference, SIU 2018, İzmir, Turkey, 2 - 05 May 2018, pp.1-4
- XIII. **HEVC'de Seyrek Arama Kullanarak Bir-Bit Dönüşümlü Hareket Kestiriminin Performans Analizi**  
DUVAR R., KÜÇÜKMANİSA A., AKBULUT O., TAŞYAPI ÇELEBİ A., URHAN O.

26. IEEE Sinyal İşleme ve İletişim Uygulamaları Kurultayı (SİU'2018), 2 - 05 May 2018

- XIV. **Hardware Implementation of Local Binary Pattern Based Two-Bit Transform Motion Estimation**  
YAVUZ S., ÇELEBİ A., TAŞYAPI ÇELEBİ A., URHAN O.  
ICMIISP 2018 : 20th International Conference on Medical Imaging, Image and Signal Processing, Thailand, 18 - 19 January 2018, vol.12, pp.19-23
- XV. **Performance Analysis of One-Bit Transform based Motion Estimation using Sparse Search on HEVC**  
DUVAR R., KÜÇÜKMANİSA A., AKBULUT O., TAŞYAPI ÇELEBİ A., URHAN O.  
26th IEEE Signal Processing and Communications Applications Conference (SIU), İzmir, Turkey, 2 - 05 May 2018
- XVI. **Implementation of 1-bit transform based motion estimation to HEVC encoder**  
DUVAR R., KÜÇÜKMANİSA A., AKBULUT O., TAŞYAPI ÇELEBİ A., URHAN O.  
2017 25th Signal Processing and Communications Applications Conference (SIU), Antalya, Turkey, Turkey, 15 - 18 May 2017
- XVII. **Implementation of 1-Bit Transform Based Motion Estimation to HEVC Encoder**  
Duvan R., KÜÇÜKMANİSA A., OrhanAkbulut O., CELEBI A., URHAN O.  
25th Signal Processing and Communications Applications Conference (SIU), Antalya, Turkey, 15 - 18 May 2017
- XVIII. **Integer 1-Bit Transform Method and its Hardware Architecture for Low-Complexity Block-Based Motion Estimation**  
Yavuz S., TAŞYAPI ÇELEBİ A., ÇELEBİ A., URHAN O.  
25th Signal Processing and Communications Applications Conference (SIU), Antalya, Turkey, 15 - 18 May 2017
- XIX. **Local Binary Pattern Method and its Hardware Architecture for Low-Complexity Motion Estimation**  
YAVUZ S., TAŞYAPI ÇELEBİ A., ÇELEBİ A., URHAN O.  
25th Signal Processing and Communications Applications Conference (SIU), Antalya, Turkey, 15 - 18 May 2017
- XX. **Kesik Gri Kodlanmış Bit Düzlemi Uyumlama Temelli Hareket Kestiriminin HEVC ye Uygulanması**  
AKBULUT O., TAŞYAPI ÇELEBİ A., URHAN O.  
Sinyal İşleme ve İletişim Uygulamaları Kurultayı, Turkey, 16 - 19 May 2015
- XXI. **Mobil Bir Cihaz Üzerinde Tek Giriş Görüntüsü ile Yüksek Dinamik Aralıklı Görüntüleme**  
TAŞYAPI ÇELEBİ A., DUVAR R., URHAN O.  
Sinyal İşleme ve İletişim Uygulamaları Kurultayı, Turkey, 16 - 19 May 2015
- XXII. **Implementation of Truncated Gray-Coded Bit-Plane Matching Based Motion Estimation to HEVC**  
AKBULUT O., CELEBI A., Urhan O.  
23rd Signal Processing and Communications Applications Conference (SIU), Malatya, Turkey, 16 - 19 May 2015, pp.2230-2233
- XXIII. **High Dynamic Range Imaging on a Mobile Device Using Single Input Image**  
TAŞYAPI ÇELEBİ A., Duvar R., Urhan O.  
23rd Signal Processing and Communications Applications Conference (SIU), Malatya, Turkey, 16 - 19 May 2015, pp.1582-1585
- XXIV. **Enhancement of fog degraded images using empirical mode decomposition Sisten bozulmuş imgelerde ampirik kip ayrisimina dayali iyilestirme**  
Çelebi A., GÜLLÜ M. K., ERTÜRK S.  
2013 21st Signal Processing and Communications Applications Conference, SIU 2013, Haspolat, Turkey, 24 - 26 April 2013
- XXV. **Visual enhancement of underwater images using Empirical Mode Decomposition and wavelet denoising**  
TAŞYAPI ÇELEBİ A., ERTÜRK S.  
2012 20th Signal Processing and Communications Applications Conference (SIU), Mugla, Turkey, Turkey, 18 - 20 April 2012
- XXVI. **Fuzzy logic based obstacle detection in images captured by imaging sonar**  
TAŞYAPI ÇELEBİ A., GÜLLÜ M. K., ERTÜRK S.  
2011 IEEE 19th Signal Processing and Communications Applications Conference (SIU), Antalya, Turkey, Turkey, 20 - 22 April 2011
- XXVII. **Mine detection in side scan sonar images using Markov Random Fields with brightness**

## compensation

TAŞYAPI ÇELEBİ A., GÜLLÜ M. K., ERTÜRK S.

2011 IEEE 19th Signal Processing and Communications Applications Conference (SIU), Antalya, Turkey, Turkey, 20 - 22 April 2011

XXVIII. **Sonar imgelerinde Ampirik Kip Ayrışımı ve Morfolojik işlemler kullanarak hedef tespiti**

TAŞYAPI ÇELEBİ A., ERTÜRK S.

2010 IEEE 18th Signal Processing and Communications Applications Conference, Diyarbakir, Turkey, Turkey, 22 - 24 April 2010

XXIX. **Iris recognition based on bant-limited phase correlation Bant-sinirli faz korelasyonu uyumlaması temelli iris tanıma**

Durmuş S., Çelebi A., GÜLLÜ M. K.

18th IEEE Signal Processing and Communications Applications Conference, SIU 2010, Diyarbakir, Turkey, 22 - 24 April 2010, pp.878-881

XXX. **EMPIRICAL MODE DECOMPOSITION BASED VISUAL ENHANCEMENT OF UNDERWATER IMAGES**

TAŞYAPI ÇELEBİ A., ERTÜRK S.

IMAGE PROCESSING THEORY, TOOLS AND APPLICATIONS, 4 - 06 July 2010

XXXI. **Low-complexity iris recognition using one-bit transform and angular radial partitioning Bir-bit dönüşümü ve açısız radyal parçalama kullanan düşük karmaşıklığa sahip iris tanıma sistemi**

Çelebi A., GÜLLÜ M. K., ERTÜRK S.

2009 IEEE 17th Signal Processing and Communications Applications Conference, SIU 2009, Antalya, Turkey, 9 - 11 April 2009, pp.696-699

XXXII. **Bir-Bit Dönüşümü ve Açısız Radyal Parçalama Kullanan Düşük Karmaşıklığa Sahip İris Tanıma Sistemi**

TAŞYAPI ÇELEBİ A., GÜLLÜ M. K., ERTÜRK S.

2009 IEEE 17th Signal Processing and Communications Applications Conference, Antalya, Turkey, Turkey, 9 - 11 April 2009

XXXIII. **Sonar İmgeleri İçin Değişik Gürültü Azaltım Yöntemlerinin Başarım Karşılaştırması**

TAŞYAPI ÇELEBİ A., GÜLLÜ M. K., ERTÜRK S.

2009 IEEE 17th Signal Processing and Communications Applications Conference, Antalya, Turkey, Turkey, 9 - 11 April 2009

XXXIV. **Facial feature matched one-bit transform for face recognition Yüz tanıma için yüz özelliklerine uyumlu bir-bit dönüşümü**

Çelebi A., Demir B., GÜLLÜ M. K., ERTÜRK S.

2008 IEEE 16th Signal Processing, Communication and Applications Conference, SIU, Aydın, Turkey, 20 - 22 April 2008

XXXV. **Yüz Tanıma için Yüz Özelliklerine Uyumlu Bir-bit Dönüşümü**

TAŞYAPI ÇELEBİ A., DEMİR B., GÜLLÜ M. K., ERTÜRK S.

2008 IEEE 16th Signal Processing, Communication and Applications Conference, Aydın, Turkey, 20 - 22 April 2008

XXXVI. **Texas Instruments DaVinci TM Platformunda Video Kodlama, İnternet Tarayıcı ve Çokluortam İletim Uygulamaları**

TAŞYAPI ÇELEBİ A., KEFELİ C., ERTÜRK S.

2007 IEEE 15th Signal Processing and Communications Applications, Eskişehir, Turkey, 11 - 13 June 2007

## Metrics

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