Prof. YUSUF SAHİLLİOĞLU

Personal Information

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International Researcher IDs
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Publons / Web Of Science ResearcherID: AGR-3296-2022
ScopusID: 56595665000
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Education Information

Doctorate, Koc University, Institute Of Science, Bilgisayar Bilimleri Ve Mühendisliği (Dr), Turkey 2008 - 2012
Postgraduate, University of Florida, Mühendislik, Bilgisayar Mühendisliği, United States Of America 2006 - 2008
Postgraduate, Koc University, Institute Of Science, Elektrik Ve Bilgisayar Mühendisliği (Yl) (Tezli), Turkey 2004 - 2006
Undergraduate, Ihsan Dogramaci Bilkent University, Faculty Of Engineering, Department Of Computer Engineering, Turkey 2000 - 2004

Biography

Yusuf Sahillioğlu is an associate professor in the Department of Computer Engineering at Middle East Technical University, Turkey. He is also an associate editor of The Visual Computer journal. His research interests include digital geometry processing and computer graphics. He has a PhD in computer science from Koç University, Turkey. Contact him at ys@ceng.metu.edu.tr or visit http://www.ceng.metu.edu.tr/~ys/. His research profile can be tracked over Scholar, ORCID, Publons, and Scopus with the IDs 1bu8cjoAAAAJ, 0000-0002-7997-4232, AGR-3296-2022, and 56595665000, respectively.

Dissertations

Doctorate, Algorithms for 3D isometric shape correspondence, Koç Üniversitesi, Bilgisayar Bilimleri Ve Mühendisliği (Dr), 2012
Postgraduate, A surface deformation framework for 3d shape recovery, Koç Üniversitesi, Elektrik Ve Bilgisayar Mühendisliği (Yl) (Tezli), 2006

Research Areas

Computer Sciences, Computer Graphics, Computer Vision, Engineering and Technology

Academic Titles / Tasks

Assistant Professor, Middle East Technical University, Faculty of Engineering, Department of Computer Engineering, 2018 - Continues
Associate Professor, Middle East Technical University, Faculty of Engineering, Department of Computer Engineering, 2017 - Continues
Assistant Professor, Middle East Technical University, Faculty of Engineering, Department of Computer Engineering, 2014 - 2018

Academic and Administrative Experience

Deputy Head of Department, Middle East Technical University, Faculty of Engineering, Department of Computer Engineering, 2018 - Continues

Courses

DIGITAL GEOMETRY PROCESSING, Postgraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018, 2016 - 2017, 2015 - 2016
DATA STRUCTURES, Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019
TECHNICAL COMMUNICATION FOR COMPUTER ENGINEERS II, Postgraduate, 2017 - 2018
COMPUTER ENGINEERING DESIGN II, Undergraduate, 2017 - 2018
ADVANCED GRAPHICS AND USER INTERFACES, Postgraduate, 2017 - 2018
INTRODUCTION TO OPERATING SYSTEMS, Undergraduate, 2017 - 2018, 2016 - 2017, 2015 - 2016
TECHNICAL COMMUNICATION FOR COMPUTER ENGINEERS I, Postgraduate, 2018 - 2019

Advising Theses

SAHİLLİOĞLU Y., A data-centric unsupervised 3D mesh segmentation method, Postgraduate, T.TÜMER(Student), 2022
SAHİLLİOĞLU Y., A Partition Based Method for Spectrum-Preserving Mesh Simplification, Postgraduate, M.YAZGAN(Student), 2022
SAHİLLİOĞLU Y., A recursive technique for filling holes in 3D triangular meshes, Postgraduate, O.METE(Student), 2022
SAHİLLİOĞLU Y., 3D point cloud classification with GANs: ACGAN and VACWGAN-GP, Postgraduate, O.ERGÜN(Student), 2022
SAHİLLİOĞLU Y., Curve-skeleton and mesh transfer between shapes, Doctorate, Ç.SEYLAN(Student), 2021
SAHİLLİOĞLU Y., 3d indoor scene segmentation using consensus clustering, Postgraduate, F.Mevlüt(Student), 2020
SAHİLLİOĞLU Y., Mesh segmentation from sparse face labels using graph convolutional neural networks., Postgraduate, Ö.İlke(Student), 2020
Kalkan S., Sahillioğlu Y., Supervised mesh segmentation for 3d objects with graph convolutional neural networks, Postgraduate, E.KAAN(Student), 2019
SAHİLLİOĞLU Y., Designing and implementing a game development framework for interactive stories and role playing games, Postgraduate, O.Emirha(Student), 2019
SAHİLLİOĞLU Y., Frankenstein3d: human body reconstruction from limited number of points, Postgraduate, O.Taştan(Student), 2019
SAHİLLİOĞLU Y., Part-based data-driven shape interpolation, Postgraduate, M.AYDINLILAR(Student), 2018
YAMAN U., SAHİLLİOĞLU Y., Extracting auxetic patterns from meshes for 3d printing, Postgraduate, L.MEHMET(Student), 2018
KALKAN S., SAHİLLİOĞLU Y., Deep 3D semantic scene extrapolation, Postgraduate, A.ABBASI(Student), 2018
SAHİLLİOĞLU Y., EPIIC: a novel encoding pluggable lossless data compression algorithm, Postgraduate,

T.İSMAİL(Student), 2018
SAHİLLİOĞLU Y., 3D indirect shape retrieval based on hand interaction, Postgraduate, E.CAN(Student), 2017
SAHİLLİOĞLU Y., Dynamic voxelization to aid illumination of real-time scenes, Postgraduate, B.YALÇINER(Student), 2016
COŞAR A., SAHİLLİOĞLU Y., A Scalable evolutionary algorithm for solving the one-dimensional bin packing problem on GPU using CUDA, Postgraduate, Ş.Özer(Student), 2015
SAHİLLİOĞLU Y., COŞAR A., Scalable evolutionary algorithm for solving the one-dimensional bin packing problem on GPU using CUDA, Postgraduate, Ş.ÖZER(Student), 2015

Published journal articles indexed by SCI, SSCI, and AHCI

I. **3D geometric kernel computation in polygon mesh structures**
ASİLER M., SAHİLLİOĞLU Y.
Computers and Graphics (Pergamon), vol.122, 2024 (SCI-Expanded)

II. **KerGen: A Kernel Computation Algorithm for 3D Polygon Meshes**
ASİLER M., SAHİLLİOĞLU Y.
Computer Graphics Forum, vol.43, no.5, 2024 (SCI-Expanded)

III. **A data-centric unsupervised 3D mesh segmentation method**
Sivri T. T., SAHİLLİOĞLU Y.
Visual Computer, vol.40, no.4, pp.2237-2249, 2024 (SCI-Expanded)

IV. **A Partition Based Method for Spectrum-Preserving Mesh Simplification**
Yazgan M., SAHİLLİOĞLU Y.
IEEE Transactions on Visualization and Computer Graphics, vol.30, no.10, pp.6839-6850, 2024 (SCI-Expanded)

V. **Augmented Paths and Reodesics for Topologically-Stable Matching**
SAHİLLİOĞLU Y., Horsman D.
ACM TRANSACTIONS ON GRAPHICS, vol.42, no.2, 2023 (SCI-Expanded)

VI. **3D point cloud classification with ACGAN-3D and VACWGAN-GP**
Ergun O., SAHİLLİOĞLU Y.
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, vol.31, no.2, pp.381-395, 2023 (SCI-Expanded)

VII. **Deep generation of 3D articulated models and animations from 2D stick figures**
Akman A., SAHİLLİOĞLU Y., Sezgin T. M.
COMPUTERS & GRAPHICS-UK, vol.109, pp.65-74, 2022 (SCI-Expanded)

VIII. **3D Shape Deformation Using Stick Figures**
SEYLAN Ç., SAHİLLİOĞLU Y.
COMPUTER-AIDED DESIGN, vol.151, 2022 (SCI-Expanded)

IX. **Human body reconstruction from limited number of points**
Tastan O., SAHİLLİOĞLU Y.
COMPUTER ANIMATION AND VIRTUAL WORLDS, vol.32, no.5, 2021 (SCI-Expanded)

X. **Scale-Adaptive ICP**
SAHİLLİOĞLU Y., Kavan L.
Graphical Models, vol.116, 2021 (SCI-Expanded)

XI. **Part-based data-driven 3D shape interpolation**
Aydinlilar M., SAHİLLİOĞLU Y.
COMPUTER-AIDED DESIGN, vol.136, 2021 (SCI-Expanded)

XII. **Voxel transformation: scalable scene geometry discretization for global illumination**
Yalciner B., SAHİLLİOĞLU Y.
JOURNAL OF REAL-TIME IMAGE PROCESSING, vol.17, no.5, pp.1585-1596, 2020 (SCI-Expanded)

XIII. **Recent advances in shape correspondence**
SAHİLLİOĞLU Y.
VISUAL COMPUTER, vol.36, no.8, pp.1705-1721, 2020 (SCI-Expanded)

XIV. **3D indirect shape retrieval based on hand interaction**
Irmak E. C., SAHİLLİOĞLU Y.
VISUAL COMPUTER, vol.36, no.1, pp.5-17, 2020 (SCI-Expanded)

XV. **A fabrication-oriented remeshing method for auxetic pattern extraction**
Mert L. M., Yaman U., Sahillioğlu Y.
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, vol.28, pp.1535-1548, 2020 (SCI-Expanded)

XVI. **3D skeleton transfer for meshes and clouds**
SEYLAN Ç., SAHİLLİOĞLU Y.
GRAPHICAL MODELS, vol.105, 2019 (SCI-Expanded)

XVII. **Deep 3D semantic scene extrapolation**
Abbasi A., Kalkan S., Sahillioglu Y.
VISUAL COMPUTER, vol.35, pp.271-279, 2019 (SCI-Expanded)

XVIII. **A Genetic Isometric Shape Correspondence Algorithm with Adaptive Sampling**
SAHİLLİOĞLU Y.
ACM TRANSACTIONS ON GRAPHICS, vol.37, no.5, 2018 (SCI-Expanded)

XIX. **An evaluation of canonical forms for non-rigid 3D shape retrieval**
Pickup D., Liu J., Sun X., Rosin P. L., Martin R. R., Cheng Z., Lian Z., Nie S., Jin L., Shamai G., et al.
GRAPHICAL MODELS, vol.97, pp.17-29, 2018 (SCI-Expanded)

XX. **Sketch-Based Articulated 3D Shape Retrieval**
SAHİLLİOĞLU Y., SEZGİN T. M.
IEEE COMPUTER GRAPHICS AND APPLICATIONS, vol.37, no.6, pp.88-101, 2017 (SCI-Expanded)

XXI. **A marching algorithm for isosurface extraction from face-centered cubic lattices**
SAHİLLİOĞLU Y.
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, vol.25, no.3, pp.2501-2512, 2017 (SCI-Expanded)

XXII. **Detail-Preserving Mesh Unfolding for Nonrigid Shape Retrieval**
SAHİLLİOĞLU Y., Kavan L.
ACM TRANSACTIONS ON GRAPHICS, vol.35, no.3, 2016 (SCI-Expanded)

XXIII. **A shape deformation algorithm for constrained multidimensional scaling**
SAHİLLİOĞLU Y.
COMPUTERS & GRAPHICS-UK, vol.53, pp.156-165, 2015 (SCI-Expanded)

XXIV. **Skuller: A volumetric shape registration algorithm for modeling skull deformities**
SAHİLLİOĞLU Y., Kavan L.
MEDICAL IMAGE ANALYSIS, vol.23, no.1, pp.15-27, 2015 (SCI-Expanded)

XXV. **Multiple Shape Correspondence by Dynamic Programming**
SAHİLLİOĞLU Y., Yemez Y.
COMPUTER GRAPHICS FORUM, vol.33, no.7, pp.121-130, 2014 (SCI-Expanded)

XXVI. **Partial 3-D Correspondence from Shape Extremities**
Sahillioglu Y., Yemez Y.
COMPUTER GRAPHICS FORUM, vol.33, no.6, pp.63-76, 2014 (SCI-Expanded)

XXVII. **Coarse-to-Fine Isometric Shape Correspondence by Tracking Symmetric Flips**
SAHİLLİOĞLU Y., Yemez Y.
COMPUTER GRAPHICS FORUM, vol.32, no.1, pp.177-189, 2013 (SCI-Expanded)

XXVIII. **Minimum-Distortion Isometric Shape Correspondence Using EM Algorithm**
SAHİLLİOĞLU Y., Yemez Y.
IEEE TRANSACTIONS ON PATTERN ANALYSIS AND MACHINE INTELLIGENCE, vol.34, no.11, pp.2203-2215, 2012 (SCI-Expanded)

XXIX. **Scale Normalization for Isometric Shape Matching**
SAHİLLİOĞLU Y., Yemez Y.
COMPUTER GRAPHICS FORUM, vol.31, no.7, pp.2233-2240, 2012 (SCI-Expanded)

XXX. **Coarse-to-Fine Combinatorial Matching for Dense Isometric Shape Correspondence**
SAHİLLİOĞLU Y., Yemez Y.
COMPUTER GRAPHICS FORUM, vol.30, no.5, pp.1461-1470, 2011 (SCI-Expanded)

XXXI. **Coarse-to-fine surface reconstruction from silhouettes and range data using mesh deformation**
SAHİLLİOĞLU Y., Yemez Y.
COMPUTER VISION AND IMAGE UNDERSTANDING, vol.114, no.3, pp.334-348, 2010 (SCI-Expanded)

XXXII. **Shape from silhouette using topology-adaptive mesh deformation**
Yemez Y., SAHİLLİOĞLU Y.
PATTERN RECOGNITION LETTERS, vol.30, no.13, pp.1198-1207, 2009 (SCI-Expanded)

Refereed Congress / Symposium Publications in Proceedings

I. **Generation of 3D human models and animations using simple sketches**
Akman A., SAHİLLİOĞLU Y., Sezgin T. M.
Graphics Interface 2020, GI 2020, Toronto, Virtual, Online, Canada, 28 - 29 May 2020, vol.2020-May

II. **SHREC'19: Shape Correspondence with Isometric and Non-Isometric Deformations**
Dyke R., Stride C., Lai Y., Rosin P., Aubry M., Boyarsky A., Bronstein A., Bronstein M., Cremers D., Fisher M., et al.
Eurographics Workshop on 3D Object Retrieval, 5 - 06 May 2019

III. **Shape Interpolation via Multiple Curves**
SAHİLLİOĞLU Y., Aydınlılar M.
Pacific Graphics (2018), 8 - 11 October 2018

IV. **SHREC 16 Matching of Deformable Shapes with Topological Noise**
Lahner Z., Rodola E., Bronstein M., Cremers D., Burghard O., Cosmo A., Dieckmann A., Klein R., SAHİLLİOĞLU Y.
EG 3DOR Workshop, including SHREC'2016, 7 - 08 May 2016

V. **SHREC 16 Partial Matching of Deformable Shapes**
Cosmo L., Rodola E., Bronstein M., Torsello A., Cremers D., SAHİLLİOĞLU Y.
EG 3DOR Workshop, including SHREC'2016, 7 - 08 May 2016

VI. **3D Shape Correspondence Under Topological Noise**
Genctav A., SAHİLLİOĞLU Y., TARI Z. S.
24th Signal Processing and Communication Application Conference (SIU), Zonguldak, Turkey, 16 - 19 May 2016, pp.401-404

VII. **Matching of deformable shapes with topological noise**
Lahner Z., Rodola E., Bronstein M., Cremers D., Burghard O., Cosmo L., Dieckmann A., Klein R., Sahillioğlu Y.
9th Eurographics Workshop on 3D Object Retrieval, Lisbon, Portugal, 08 May 2016, pp.55-60

VIII. **Partial Matching of Deformable Shapes**
Cosmo L., Rodola E., Bronstein M., Torsello A., Cremers D., Sahillioğlu Y.
9th Eurographics Workshop on 3D Object Retrieval, Lisbon, Portugal, 08 May 2016, pp.61-67

IX. **iAutoMotion an Autonomous Content based Video Retrieval Engine**
Rossetto L., Giangreco I., Tanase C., Schuldt H., Seddati O., Dupont S., SEZGİN T. M., SAHİLLİOĞLU Y.
22nd International Conference on Multimedia Modeling, 4 - 06 January 2016

X. **IMOTION Searching for Video Sequences using Multi Shot Sketch Queries**
Rossetto L., Giangreco I., Heller S., Tanase C., Schuldt H., Seddati O., Dupont S., SEZGİN T. M., Altıok O., SAHİLLİOĞLU Y.
22nd International Conference on Multimedia Modeling, 4 - 06 January 2016

XI. **IMOTION — a content-based video retrieval engine**
Rossetto L., Giangreco I., Schuldt H., Dupont S., Seddati O., Sezgin M., SAHİLLİOĞLU Y.
21st International Conference on MultiMedia Modeling, MMM 2015, Sydney, Australia, 5 - 07 January 2015, vol.8936, pp.255-260

XII. **3D isometric shape correspondence 3B izometrik şekil eşleme**
SAHİLLİOĞLU Y., Yemez Y.

18th IEEE Signal Processing and Communications Applications Conference, SIU 2010, Diyarbakır, Turkey, 22 - 24 April 2010, pp.5-8

XIII. **Triangulation free 3D Reconstruction from LiDAR Data**
SAHİLLİOĞLU Y.
International Conference onComputer Graphics & Virtual Reality (CGVR), 01 June 2010

XIV. **3D Shape Correspondence by Isometry Driven Greedy Optimization**
SAHİLLİOĞLU Y., YEMEZ Y.
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 01 June 2010

XV. **3B Izometrik Şekil Eşleme**
SAHİLLİOĞLU Y., YEMEZ Y.
IEEE Conference on Signal Processingand Communications Applications (SIU), Turkey, 01 June 2010

XVI. **3D Correspondence by Breadth First Search Frontiers**
SAHİLLİOĞLU Y.
International Conference on ComputerGraphics & Virtual Reality (CGVR), 01 June 2009

XVII. **3D shape recovery and tracking from multi-camera video sequences via surface deformation Çok kamerali video görüntülerinden yüzey deformasyonu ile 3B şekil geriċatma ve izleme**
SAHİLLİOĞLU Y., Yemez Y., Skala V.
2006 IEEE 14th Signal Processing and Communications Applications, Antalya, Turkey, 17 - 19 April 2006, vol.2006

XVIII. **A surface deformation framework for 3D shape recovery**
SAHİLLİOĞLU Y., Yemez Y.
International Workshop on Multimedia Content Representation, Classification and Security, MRCS 2006, İstanbul, Turkey, 11 - 13 September 2006, vol.4105 LNCS, pp.570-577

XIX. **Hair Motion Simulation**
Sahillioğlu Y., Özgüç H. B.
International Symposium on Computer and InformationSciences (ISCIS), Antalya, Turkey, 01 June 2004, pp.126-135

Supported Projects

Sahillioğlu Y., TUBITAK Project, İzometrik Olmayan Şekiller Arasında Gönderim Hesaplama, 2020 - 2023
SAHİLLİOĞLU Y., KALKAN S., TUBITAK Project, 3b Sahne Etiketleme Ve Sentezleme, 2016 - 2019
Sahillioğlu Y., TUBITAK Project, Sanal Tıp İçin Geometrik Modelleme Araçları, 2015 - 2018
SAHİLLİOĞLU Y., Project Supported by Higher Education Institutions, Şekil Deformasyonu ile Duruş Eniyilemesi, 2015 - 2016

Activities in Scientific Journals

Visual Computer, Editor, 2019 - Continues

Scientific Refereeing

ACM TRANSACTIONS ON GRAPHICS, SCI Journal, March 2022
COMPUTER GRAPHICS FORUM, National Scientific Refreed Journal, January 2022
IEEE TRANSACTIONS ON MULTIMEDIA, SCI Journal, December 2021
COMPUTER-AIDED DESIGN, SCI Journal, September 2021
VISUAL COMPUTER, Journal Indexed in SCI-E, July 2021
COMPUTER AIDED GEOMETRIC DESIGN, National Scientific Refreed Journal, March 2021

Scientific Research / Working Group Memberships

Grafik Kafe (Graphics Cafe), Middle East Technical University, Turkey, -, 2019 - Continues
Görüntü İşleme Laboratuvarı (Imagelab), Middle East Technical University, Turkey, image.ceng.metu.edu.tr, 2019 - Continues

Mobility Activity

Erasmus Programme, Lecturing, Nanyang Technology University, Singapore, 2016 - 2016

Metrics

Publication: 53
Citation (WoS): 289
Citation (Scopus): 298
H-Index (WoS): 9
H-Index (Scopus): 11

Congress and Symposium Activities

SIGGRAPH Asia 2018, Attendee, Tokyo, Japan, 2018
Eurasia Graphics 2018, Working Group, Gaziantep, Turkey, 2018
SIGGRAPH Asia, Attendee, Bangkok, Thailand, 2017

Invited Talks

Discrete Optimization for Shape Matching, Seminar, Tobb Ekonomi Ve Teknoloji Üniversitesi, Turkey, December 2018
State of the Art on 3D Printing, Conference, Hasan Kalyoncu Üniversitesi, Turkey, November 2018
3D Canonical Pose Computation, Seminar, Nanyang Technology University, Singapore, August 2016
Interactive Deformation Tools for Virtual Medicine, Seminar, University of Florida, United States Of America, November 2015
A Volumetric Shape Registration Algorithm for Modeling Skull Deformities, Seminar, University of Central Florida, United States Of America, November 2015
Dimensionality Reduction, Seminar, University of Pennsylvania, United States Of America, November 2013
3D Isometric Shape Correspondence, Seminar, United Kingdom, February 2013

Scholarships

BIDEB 2219, TUBITAK, 2013 - 2014

Awards

Sahillioğlu Y., IEEE Transactions on Multimedia Outstanding Reviewer Award , Ieee, June 2020
Sahillioğlu Y., ODTÜ Genç Araştırmacı Ödülü, Orta Doğu Teknik Üniversitesi, May 2017
Sahillioğlu Y., ODTÜ Genç Araştırmacı Ödülü, Orta Doğu Teknik Üniversitesi, May 2016
Sahillioğlu Y., ODTÜ Genç Araştırmacı Ödülü, Orta Doğu Teknik Üniversitesi, May 2015

Sahillioğlu Y., Koç University Graduate Studies Excellence Award 2012, Koç Üniversitesi, June 2012
Sahillioğlu Y., IEEE Conference on Signal Processing and Applications Best Paper Award, Ieee, May 2010

Non Academic Experience

AMD (Advanced Micro Devices)