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Education

PhD, Computer Science, Koç University, 2012.

MS, Computer Science, University of Florida, 2008.

MS, Computer Science, Koç University, 2006.

BS, Computer Science, Bilkent University, 2004.

Professional Experience

Prof., Computer Engineering Dept., Bilkent University, 07/2026 – present.

Prof., Computer Engineering Dept., Middle East Technical University, 12/2022 – 07/2026.

Assoc. Prof., Computer Engineering Dept., Middle East Technical University, 03/2017 – 12/2022.

Asst. Prof., Computer Engineering Dept., Middle East Technical University, 09/2014 – 03/2017.

Postdoctoral Researcher, Computer Science, University of Pennsylvania, 12/2012 – 03/2014.

Visiting Researcher, Computer Science, Koç University, 03/2014 – 09/2014.

Intern, AMD/ATI, Orlando, FL, 06/2007 – 12/2007.

Consultant (remote), Arcturus Studios, Canada, 11/2020 – 01/2024.

Vice Chairman, Computer Engineering Dept., Middle East Technical University, 06/2016 – 03/2022,
08/2024 – 07/2026.

Fields of Research Interest

Computer Graphics, Digital Geometry Processing, Quantum Computing.

Publications

Journal Articles

1. G. Sucu, S. Kalkan, Y. Sahillioğlu, FanNet: A Mesh Convolution Operator for Learning Dense Maps, *Computers & Graphics*, 2025.
2. B. Tosyalı and Y. Sahillioğlu, Intrinsic Reflective Symmetry Axis Curve Generation for Meshes, *Lecture Notes in Computer Science (Proc. CGI)*, 2025.

3. B. Akyürek and Y. Sahillioğlu, Real-Time Secondary Animation with Spring Decomposed Skinning, *Computer Graphics Forum (Proc. SGP)*, Vol. 44, No. 5, 2025.
4. M. Asiler and Y. Sahillioğlu, Kergen: A kernel computation algorithm for 3d polygon meshes, *Computer Graphics Forum (Proc. SGP)*, Vol. 43, No. 5, 2024.
5. Z. Kuşkonmaz and Y. Sahillioğlu, A Surface-Based Approach for 3D Approximate Convex Decomposition, *Turkish J. of Elec. Eng. and Computer Science*, 2024.
6. M. Asiler and Y. Sahillioğlu, 3D geometric kernel computation in polygon mesh structures, *Computers & Graphics*, Vol. 122, 103951, 2024.
7. T. Sivri and Y. Sahillioğlu, A Data-Centric Unsupervised 3D Mesh Segmentation Method, *The Visual Computer*, Vol. 40, No. 4, 2237-2249, 2024.
8. M. Yazgan and Y. Sahillioğlu, A Partition Based Method for Spectrum-Preserving Mesh Simplification, *IEEE Transactions on Visualization and Computer Graphics*, Vol. 30, No. 10, 6839-6850, 2023.
9. O. Ergün and Y. Sahillioğlu, 3D point cloud classification with ACGAN-3D and VACWGAN-GP, *Turkish Journal of Electrical Eng. and Computer Sciences*, Vol. 31, No. 2, 381-395, 2023.
10. Y. Sahillioğlu and D. Horsman, Augmented Paths and Reodesics for Topologically-Stable Matching, *ACM Transactions on Graphics (presented at SIGGRAPH Asia)*, Vol. 42, No. 2, 1-15, 2022.
11. A. Akman, Y. Sahillioğlu, M. Sezgin, Deep Generation of 3D Articulated Models and Animations from 2D Stick Figures, *Computers & Graphics*, Vol. 109, 65-74, 2022.
12. Ç. Seylan and Y. Sahillioğlu, 3D Shape Deformation Using Stick Figures, *Computer-Aided Design*, Vol. 151, 103352, 2022.
13. M. Aydınlar and Y. Sahillioğlu, Part-Based Data-Driven 3D Shape Interpolation, *Computer-Aided Design*, Vol. 136, 103027, 2021.
14. Y. Sahillioğlu and L. Kavan, Scale-Adaptive ICP, *Graphical Models*, Vol. 116, 101113, 2021.
15. O. Taştan and Y. Sahillioğlu, Human Body Reconstruction from Limited Number of Points, *Computer Animation and Virtual Worlds*, Vol. 32, No. 5, e1995, 2021.
16. Y. Sahillioğlu, Recent advances in shape correspondence, *The Visual Computer*, Vol. 36, 1705-1721, 2020.
17. E. Irmak and Y. Sahillioğlu, 3D Indirect Shape Retrieval Based on Hand Interaction, *The Visual Computer*, Vol. 36, No. 1, 5-17, 2020.
18. L. Mert, U. Yaman, Y. Sahillioğlu, A fabrication-oriented remeshing method for auxetic pattern extraction, *Turkish J. of Elec. Eng. and Computer Science*, Vol. 28, No. 3, 1535-1548, 2020.
19. B. Yalçiner and Y. Sahillioğlu, Voxel transformation: scalable scene geometry discretization for global illumination, *Journal of Real-Time Image Processing*, 1-12, 2019.
20. Ç. Seylan and Y. Sahillioğlu, 3D Skeleton Transfer for Meshes and Clouds, *Graphical Models*, Vol. 105, 2019.
21. Y. Sahillioğlu, A Genetic Isometric Shape Correspondence Algorithm with Adaptive Sampling, *ACM Transactions on Graphics (Presented at SIGGRAPH Asia)*, Vol. 37, No. 5, 175, 2018.
22. A. Abbasi, S. Kalkan, Y. Sahillioğlu, Deep 3D Semantic Scene Extrapolation, *The Visual Computer*, Vol. 35, No. 2, 271-279, 2018.

23. D. Pickup, J. Liu, X. Sun, P. Rosin, R. Martin, Z. Cheng, Z. Lian, S. Nie, L. Jin, G. Shamaï, Y. Sahillioğlu, L. Kavan, An Evaluation of Canonical Forms for Non-Rigid 3D Shape Retrieval, *Graphical Models*, Vol. 97, 17-29, 2018.
24. Y. Sahillioğlu and M. Sezgin, Sketch-based Articulated 3D Shape Retrieval, *IEEE Computer Graphics and Applications*, Vol. 37, No. 6, 88-101, 2017.
25. Y. Sahillioğlu, A Marching Algorithm for Isosurface Extraction from Face-Centered Cubic Lattices, *Turkish Journal of Electrical Eng. and Computer Sciences*, Vol. 25, No. 3, 2501-2512, 2017.
26. Y. Sahillioğlu and L. Kavan, Detail-preserving Mesh Unfolding for Non-rigid Shape Retrieval, *ACM Transactions on Graphics (Presented at SIGGRAPH)*, Vol. 35, No. 3, 27, 2016.
27. L. Rossetto, I. Giangreco, C. Tanase, H. Schuldt, O. Seddati, S. Dupont, M. Sezgin, and Y. Sahillioğlu, iAutoMotion - an Autonomous Content-based Video Retrieval Engine, *Lecture notes in Computer Science (MMM)*, Vol. 9517, 383-387, 2016.
28. L. Rossetto, I. Giangreco, S. Heller, C. Tanase, H. Schuldt, O. Seddati, S. Dupont, M. Sezgin, O. C. Altıok, Y. Sahillioğlu, IMOTION - Searching for Video Sequences using Multi-Shot Sketch Queries, *Lecture notes in Computer Science (MMM)*, Vol. 9517, 377-382, 2016.
29. Y. Sahillioğlu, A shape deformation algorithm for constrained multidimensional scaling, *Computers & Graphics*, Vol. 53, 156-165, 2015.
30. Y. Sahillioğlu and L. Kavan, Skuller: A Volumetric Shape Registration Algorithm for Modeling Skull Deformities, *Medical Image Analysis*, Vol. 23, No. 1, 15-27, 2015.
31. Y. Sahillioğlu and Y. Yemez, Multiple Shape Correspondence by Dynamic Programming Approximation, *Computer Graphics Forum (Proc. PG)*, Vol. 33, No. 7, 121-130, 2014.
32. Y. Sahillioğlu and Y. Yemez, Partial 3D Correspondence from Shape Extremities, *Computer Graphics Forum*, Vol. 33, No. 6, 63-76, 2014.
33. Y. Sahillioğlu and Y. Yemez, Coarse-to-Fine Isometric Shape Correspondence by Tracking Symmetric Flips, *Computer Graphics Forum*, Vol. 32, No. 1, 177-189, 2013.
34. Y. Sahillioğlu and Y. Yemez, Scale Normalization for Isometric Shape Matching, *Computer Graphics Forum (Proc. PG)*, Vol. 31, No. 7, 2233-2240, 2012.
35. Y. Sahillioğlu and Y. Yemez, Minimum-Distortion Isometric Shape Correspondence Using EM Algorithm, *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)*, Vol. 34, No. 11, 2203-2215, 2012.
36. Y. Sahillioğlu and Y. Yemez, Coarse-to-Fine Combinatorial Matching For Dense Isometric Shape Correspondence, *Computer Graphics Forum (Proc. SGP)*, Vol. 30, No. 5, 1461-1470, 2011.
37. Y. Sahillioğlu and Y. Yemez, Coarse-to-Fine Surface Reconstruction from Silhouettes and Range Data Using Mesh Deformation, *Computer Vision and Image Understanding (CVIU)*, Vol. 114, 334-348, 2010.
38. Y. Yemez and Y. Sahillioğlu, Shape from Silhouette Using Topology-Adaptive Mesh Deformation, *Pattern Recognition Letters*, Vol. 30(13), 1198-1207, 2009.
39. Y. Sahillioğlu and Y. Yemez, A Surface Deformation Framework for 3D Shape Recovery, *Lecture notes in Computer Science (MRCS)*, Vol. 4105, 570-577, 2006.

Peer-Reviewed Conference Papers

1. A. Akman, Y. Sahillioğlu, M. Sezgin, Generation of 3D Human Models and Animations Using Simple Sketches, *Graphics Interface*, 2020.
2. R. Dyke, C. Stride, .., Y. Sahillioğlu, .., J. Yang, SHREC'19: Shape Correspondence with Isometric and Non-Isometric Deformations, *Proc. of Eurographics Workshop on 3D Object Retrieval (3DOR)*, 2019.
3. Y. Sahillioğlu and M. Aydınlar, Shape Interpolation via Multiple Curves, *Proc. of Pacific Graphics Posters*, 9-10, 2018.
4. L. Cosmo, E. Rodola, M. M. Bronstein, A. Torsello, D. Cremers, Y. Sahillioğlu, SHREC'16: Partial Matching of Deformable Shapes, *Proc. of Eurographics Workshop on 3D Object Retrieval (3DOR)*, 2016.
5. Z. Lahner, E. Rodola, M. M. Bronstein, D. Cremers, O. Burghard, L. Cosmo, A. Dieckmann, R. Klein, Y. Sahillioğlu, SHREC'16: Matching of Deformable Shapes with Topological Noise, *Proc. of Eurographics Workshop on 3D Object Retrieval (3DOR)*, 2016.
6. A. Genctav, Y. Sahillioğlu, S. Tari, 3D shape correspondence under topological noise, *IEEE Conference on Signal Processing and Communications Applications (SIU)*, 401-404, 2016.
7. L. Rossetto, I. Giangreco, H. Schuldt, S. Dupont, O. Seddati, M. Sezgin, Y. Sahillioğlu, IMOTION - Content-Based Video Retrieval Engine, *Intl Conference on MultiMedia Modeling*, 255-260, 2015.
8. Y. Sahillioğlu and Y. Yemez, 3D Shape Correspondence by Isometry-Driven Greedy Optimization, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 453-458, 2010.
9. Y. Sahillioğlu, Triangulation-free 3D Reconstruction from LiDAR Data, *International Conference on Computer Graphics & Virtual Reality (CGVR)*, 27-32, 2010.
10. Y. Sahillioğlu and Y. Yemez, 3D Isometric Shape Correspondence, *IEEE Conference on Signal Processing and Communications Applications (SIU)*, 5-8, 2010 (Best Paper Award).
11. Y. Sahillioğlu, 3D Correspondence by Breadth-First Search Frontiers, *International Conference on Computer Graphics & Virtual Reality (CGVR)*, 203-207, 2009.
12. Y. Sahillioğlu, Y. Yemez, and V. Skala, 3D Shape Recovery and Tracking from Multi-Camera Video Sequences via Surface Deformation, *IEEE Conference on Signal Processing and Communications Applications (SIU)*, 1-4, 2006.
13. Y. Sahillioğlu and B. Özgüç, Hair Motion Simulation, *International Symposium on Computer and Information Sciences (ISCIS)*, 126-135, 2004.

Theses

1. Y. Sahillioğlu, *Algorithms for 3D Isometric Shape Correspondence*, PhD thesis, Koç University, 2012 (Koç University Graduate Studies Excellence Award).
2. Y. Sahillioğlu, *A Surface Deformation Framework for 3D Shape Recovery*, MS thesis, Koç University, 2006.

Supervised Theses

1. G. Sucu, *Geometric Deep Learning for 3D Isometric Shape Correspondence*, PhD thesis, METU, 2025.
2. B. Tosyalı, *Intrinsic Symmetry Curve Generation in 3D Meshes*, MS thesis, METU, 2025.
3. M. Asiler, *Additive Geometric Kernel Computation Algorithms in 3D*, PhD thesis, METU, 2024.

4. O. Kuşkonmaz, *A Simple Surface-Based Approach for the Convex Decomposition of 3D Meshes*, MS thesis, METU, 2023.
5. M. Yazgan, *A Partition Based Method for Spectrum-Preserving Mesh Simplification*, MS thesis, METU, 2022.
6. O. Mete, *A Recursive Technique for Filling Holes in 3D Triangular Meshes*, MS thesis, METU, 2022.
7. T. Tümer, *A Data-Centric Unsupervised 3D Mesh Segmentation Method*, MS thesis, METU, 2022.
8. O. Ergün, *3D Point Cloud Classification With GANS: ACGAN and VACWGAN-GP*, MS thesis, METU, 2022.
9. Ç. Seylan, *Curve-Skeleton and Mesh Transfer Between Shapes*, PhD thesis, METU, 2021.
10. F. Küçükdemir, *3D Indoor Scene Segmentation Using Consensus Clustering*, MS thesis, METU, 2020.
11. İ. Sever, *Mesh Segmentation from Sparse Face Labels Using Graph Convolutional Neural Networks*, MS thesis, METU, 2020.
12. E. Perek, *Supervised Mesh Segmentation for 3D Objects with Graph Convolutional Neural Networks*, MS thesis, METU, 2019.
13. O. Taştan, *Frankenstein3D: Human Body Reconstruction for Limited Number of Points*, MS thesis, METU, 2019.
14. E. Bayyurt, *Designing a Game Development Framework for Role Playing Games*, MS thesis, METU, 2019.
15. M. Aydınllı, *Part-Based Data-Driven Shape Interpolation*, MS thesis, METU, 2018.
16. A. Abbasi, *Deep 3D Semantic Scene Extrapolation*, MS thesis, METU, 2018.
17. L. Mert, *Extracting Auxetic Patterns from Meshes for 3D Printing*, MS thesis, METU, 2018.
18. T. Doğan, *A Novel Encoding Pluggable Lossless Data Compression Algorithm*, MS thesis, METU, 2018.
19. E. Irmak, *3D Indirect Shape Retrieval Based on Hand Interaction*, MS thesis, METU, 2017.
20. B. Yalçiner, *Dynamic Voxelization to Aid Illumination of Real-Time Scenes*, MS thesis, METU, 2016.
21. Ş. Özcan, *A Scalable evolutionary algorithm for solving the one-dimensional bin packing problem on GPU using CUDA*, MS thesis, METU, 2015.

Citations

Citations: 1180, h-index: 17 (Google Scholar, as of 05.08.2026).

Professional Activities

Invited Talks

1. Mesh Processing, *METU Computer Engineering Image Lab Seminars*, Ankara, November 2020.
2. Discrete Optimization for Shape Matching, *TOBB Computer Engineering Dept. Seminars*, Ankara, December 2018.
3. State of the Art on 3D Printing, *Eurasia Graphics Workshop*, Gaziantep, November 2018.

4. Range Queries and Square Root Complexity, *METU Computer Engineering Dept. Seminars*, Ankara, July 2018.
5. 3D Canonical Pose Computation, *Nanyang Technological University, Computer Science Dept.*, Singapore, August 2016.
6. Volumetric Registration of Medical Data, *University of Central Florida, Computer Science Dept.*, Orlando, USA, November 2015.
7. Interactive Deformation Tools for Virtual Medicine, *University of Florida, Computer Science Dept.*, Gainesville, USA, November 2015.
8. Dimensionality Reduction, *University of Pennsylvania, Computer Science Dept.*, Philadelphia, USA, November 2013.
9. 3D Isometric Shape Correspondence, *Microsoft Research, Interactive 3D Technologies Group*, Cambridge, UK, February 2013.

Patent

1. Bel Çevresi Ölçme Cihazı ve Yöntemi (Sahillioğlu, Y. and Toyan, E. B.), 2016/12898, Turkish Patent and Trademark Office, Granted: September 2020. (Licensed to METU Technology Transfer Office).

Reviewer/Mentor

1. ACM SIGGRAPH, Computer Graphics Forum, The Visual Computer, Computers & Graphics, IEEE Transactions on Image Processing, Turkish Journal of Electrical Engineering & Computer Sciences, Computer Animation and Virtual Worlds, IEEE Transactions on Multimedia.
2. TÜBİTAK TEYDEB (Technology and Innovation Support Program) Projects.
3. Program Committee member of CSW 2011 (Computer Science Student Workshop).
4. International Program Committee member of SGP 2016 (Symposium on Geometry Processing).
5. Senior CENG projects mentor (2017-present): <https://senior.ceng.metu.edu.tr/>
6. Guided CENG research projects coordinator (2024-2025): <https://guided.ceng.metu.edu.tr/>
7. Summer Geometry Initiative mentor (2021-present): <https://sgi.mit.edu/>

Associate Editor

1. The Visual Computer (2019 - 2025).

Awards

1. METU Academic Performance Award, 2024.
2. Computers & Graphics, Best Reviewer Award, 2024.
3. IEEE Transactions on Multimedia, Outstanding Reviewer Award, 2020.
4. METU Academic Performance Award, 2018.
5. TÜBİTAK-2242 University Students Research Project Competitions, Winner, 2017.
6. METU Young Researcher Award, 2017.
7. METU Young Researcher Award, 2016.
8. METU Young Researcher Award, 2015.

9. TÜBİTAK-1001 Project Performance Award, 2015.
10. TÜBİTAK-BİDEB 2219 Postdoc Research Program, 2013.
11. Fulbright visiting PhD student scholarship (award not accepted due to another offer), 2012,
12. Koç University Graduate Studies Excellence Award, 2012.
13. IEEE Conference on Signal Processing and Applications, Best Student Paper Award, 2010.

Teaching

Discrete Mathematics, Operating Systems, Computer Graphics, Data Structures, Algorithms and Data Structures, Advanced Graphics and User Interfaces, Technical Communication for Computer Engineers, Advanced Unix, Digital Geometry Processing (new course offered by YS: <https://youtu.be/vaQYKokRihc>)

Funded Research Projects

1. TÜBİTAK 1001 (2026 – expected end: 2029): 3D Mesh Parameterization with Cut-Distortion-Packing Optimizations. Role: PI.
2. COST Action CA24123 (2025 – expected end: 2029): Extended Reality Neurorehabilitation of Spatial Neglect and Related Disorders After Brain Injury (neuroXRehab). Role: Management Committee.
3. TÜBİTAK 1001 (2024 – expected end: 2027): 3D Scan Registration and Reconstruction for Digital Twin Creation. Role: PI.
4. TÜBİTAK 1001 (2020 – 2023): Map Computation Between Non-Isometric Shapes. Role: PI.
5. TÜBİTAK 1001 (2016 – 2019): 3D Scene Labeling and Synthesis. Role: PI.
6. TÜBİTAK 3501 (2015 – 2018): Geometric Modeling Tools for Virtual Medicine. Role: PI.