

CURRICULUM VITAE

Min-Hyung Choi

Department of Computer Science and Engineering
 University of Colorado Denver
 Campus Box 109, PO Box 173364
 Denver, CO 80027
 Phone: (303)315-1404, Email: min.choi@ucdenver.edu, <http://cse.ucdenver.edu/~mchoi>

Education

University of Iowa	1999	Ph.D.	Computer Science
Advisor: James F. Cremer			
Dissertation Title: "Geometry Awareness for Interactive Object Manipulation"			
University of Iowa	1996	M.S.	Computer Science
Chung-Ang University, Seoul, S. Korea	1992	M.E.	Computer Engineering
Chung-Ang University, Seoul, S. Korea	1990	B.S.	Computer Science

Professional Experience

2016 – present Co-Director, Comcast Media and Technology Center, University of Colorado Denver

2006 – present Associate Professor with Tenure, Department of Computer Science and Engineering, University of Colorado Denver

2000 – present Director, Computer Graphics and VR Laboratory, University of Colorado Denver

2010 – 2015 Graduate Faculty, Department of Computer Science, University of Colorado at Boulder

2010 – 2011 President, Korean-American Scientists and Engineers Association, Colorado Chapter

2007 – 2007 Visiting Professor, Yonsei University, Seoul Korea

2003 – 2009 Graduate Faculty, Bioinformatics, School of Medicine, University of Colorado Denver

2003 – 2008 Graduate Faculty, Department of Electrical and Computer Engineering, University of Colorado at Boulder

2001 – 2008 Associate, Center for Computational Biology, University of Colorado Denver

2001 – 2001 Visiting Professor, Korean Advanced Institute of Science and Technology

2001 – 2005 President, ACM SIGGRAPH Denver/Boulder Chapter

1999 – 2006 Assistant Professor, Department of Computer Science and Engineering, University of Colorado at Denver and Health Sciences Center

1995 – 1999 Research Assistant, Department of Computer Science, University of Iowa

1993 – 1994 Teaching Assistant, Department of Computer Science, University of Iowa

Honors and Awards

1. Best Paper Award, *IEEE International Conference on Biomedical and Health Informatics (IEEE BHI 2018)*

2. Emerging Scholar Award, Research and Creative Activities Symposium, University of Colorado Denver and Anschutz, 2018
3. Outstanding Paper Award, *9th International Conference on Internet Multimedia, Image Processing, HCI and Intelligent Systems (ICONI 2017)*
4. Best Paper Award, *ACM MobiCom 8th Annual S3 Workshop 2016*
5. Campus Award for Excellence in Research and Creative Activities, University of Colorado Denver, May 2006
6. Best Paper Award, *International Conference on Computational Science Visualization and Virtual Reality*, Emory University, Atlanta Georgia, June 2005
7. NSF CAREER Award, National Science Foundation, 2003

Referred Journal Publications

(Student names are underlined)

1. Hawkar Oagaz, Breawn Schoun, **Min-Hyung Choi**, “Neurocognitive Assessment in Virtual Reality Through Behavioral Response”, *IEEE Journal of Biomedical Health Informatics*, In review
2. Breawn Schoun, Shane Transue, Ann C. Halbower, **Min-Hyung Choi**, “Non-Contact Tidal Volume Measurement through Thin Medium Thermal Imaging”, *Smart Health*, In print. Online preprint version is available from <https://doi.org/10.1016/j.smhl.2018.07.018> 2018
3. Nak-Jun Sung, Shane Transue, Minsang Kim, Yoo-Joo Choi, **Min-Hyung Choi**, Min Hong, “Optimization of Material Properties for Coherent Behavior across Multi-Resolution Cloth Models”, *KSII Transactions on Internet and Information Systems*, Vol. 12, No. 8, 2018
4. Shane Transue, Phuc Nguyen, Tam Vu, **Min-Hyung Choi**, “Volumetric Reconstruction of Thermal-depth Fused 3D Models for Occluded Body Posture Estimation”, *Smart Health*, In print. Online version is available from <https://doi.org/10.1016/j.smhl.2018.03.003> 2018
5. Seho Kee, Wonjoong Kim, Jaepil Jung, **Min-Hyung Choi**, “Effect of Via Pitch on the Extrusion Behavior of Cu-filled TSV”, *Korean Journal of Metals and Materials*, Vol. 56, No. 6, pp.449-458, 2018
6. Wook Song, Hwamin Lee, Seung-Hyun Lee, **Min-Hyung Choi**, Min Hong, “Implementation of Android Application for Indoor Positioning System with Estimote BLE Beacons”, *Journal of Internet Technology*, Vol 19, No. 3, pp.871-878, 2018
7. Soo Kyun Kim, Shin-Jin Kang, Yoo-Joo Choi, **Min-Hyung Choi** and Min Hong, “Augmented-Reality Survey: from Concept to Application”, *Transaction on Internet and Information System*, Vol. 11, No. 2, pp982-1004, Feb 2017
8. Soo Kyun Kim, Jae-Kwon Han, Tae-Hyoung Kim, Syungog An, and **Min-Hyung Choi**, “Mobile Action RPG Game Design Using Comma-Separated Values Parsing Table”, *Advanced Science Letters*, Vol. 23, No. 10, 10419–10422, Dec. 2017
9. Hwamin Lee, Se Dong Min, **Min-Hyung Choi**, Dae Won Lee, “Multi-Agent System for Fault Tolerance in Wireless Sensor Network”, *Transaction on Internet and Information System*, Vol. 10, No. 3, pp1321-1332, March 2016
10. Hwamin Lee, Doo-Soon Park, **Min-Hyung Choi**, “A Development of Hybrid Drug Information System Using Image Recognition”, *Symmetry*, Vol. 7 No. 2, pp376-382, 2015
11. **Min-Hyung Choi**, S. Wilber, M. Hong, “Estimating Material Properties of Deformable Objects by Considering Global Object Behavior in Video Streams”, *Journal of Multimedia Tools and Applications*, Vol. 74, No. 10, pp3361-3375, April 2014

12. **Min-Hyung Choi**, M. Alquzi, M. Hong, “Assessment of Human Perceptual Sensitivity to Physically Non-Conforming Motion in Virtual Environments”, *Journal of Supercomputing*, Vol.69 pp1311–1323, April 2014
13. S. Duong, **Min-Hyung Choi**, Interactive “Full-body Motion Capture Using Infrared Sensor Network”, *International Journal of Computer Graphics and Animation*, Vol. 3 No. 4, pp. 41-56, 2013
14. J. Jeon, M. Hong, **Min-Hyung Choi**, Y. Jeong, “Hierarchical Bounding Sphere FFD-AABB Algorithm for Fast Collision Handling of 3D Deformable Objects on Smart Devices”, *Journal of Internet Technology*, Vol. 14, No. 5, pp. 843-850, 2013
15. **Min-Hyung Choi**, “Pursuit of Realism in Computer Graphics” *KSEA Letters, Journal of the Korean-American Scientists and Engineers Association*, Vol. 41 No. 2 pp. 6-7, 2013
16. J. Jeon, **Min-Hyung Choi**, M. Hong, “Enhanced FFD-AABB Collision Algorithm for Deformable Objects”, *Journal of Information Processing System*, Vol. 8, No. 4, pp.713-720, 2012
17. S. Jung, M. Hong, and **Min-Hyung Choi**, “Collision Handling for Free-Form Deformation Embedded Surface”, *IET Image Processing*, Vol. 5, Iss. 4, pp.341-348, 2011
18. M. Roh, W. Kim, Y. Kim, **Min-Hyung Choi**, “Effect of Hot-Forging on Mechanical Properties of Silicon Carbide Sintered with $\text{Al}_2\text{O}_3\text{-Y}_2\text{O}_3\text{-MgO}$ ”, *Metals and Materials International* Vol. 16, No. 6, pp.891-894, 2010
19. K. Han, J. Ku, K. Kim, H. Jang, J. Park, J. Kim, C. Kim, **Min-Hyung Choi**, I. Kim, and S. Kim, "Virtual Reality Prototype for Measurement of Expression Characteristics in Emotional Situations" *Computers in Biology and Medicine*, Vol. 39, pp.173-179, 2009
20. M. Hong, S. Welch, S. Jung, **Min-Hyung Choi**, D. Park, "Enhanced Second-Order Implicit Constraint Enforcement for Dynamic Simulation" *KSII Transaction on Internet and Information Systems*, Vol. 2. No. 1, pp.51-62, 2008
21. Samuel W. J. Welch, Min Hong, John A. Trapp, **Min-Hyung Choi** “Parameter-Free Second Order Numerical Scheme for Constrained Multibody Dynamical Systems,” *Journal of Guidance, Control, and Dynamics*, vol. 30 no. 5, pp.1494-1503, 2007
22. Hongjun Jeon and **Min-Hyung Choi**, “Controllable Simulation of Deformable Objects Using Heuristic Optimal Control,” *Journal for Geometry and Graphics* Vol. 11, No. 1, pp.059-071, 2007
23. Doo-Soon Park, **Min-Hyung Choi**, “Interprocedural Transformations for Parallel Computing”, *Journal of Korea Multimedia Society*, Vol. 9, No. 12, pp.28-36, 2006
24. Min Hong, Sunhwa Jung, **Min-Hyung Choi**, Samuel Welch, “Fast Volume Preservation for a Mass-Spring System”, *IEEE Computer Graphics and Application*, pp.83-91 September/October 2006
25. Yoo-Joo Choi, Min Hong, **Min-Hyung Choi**, Myoung-Hee Kim, “Adaptive Surface Deformable Model with Shape-Preserving Spring”, *Computer Animation and Virtual World*, Vol. 16, pp.69-83, 2005
26. Min Hong, **Min-Hyung Choi**, “Effective Simulation Control for Deformable Objects”, *Journal of Korean Association of Computer Education*, Vol. 8, No. 1, pp.73-80, 2005
27. Jung-Kak Seo, Hyun-Ki Hong, Cheung-Woon Jho, Min-Hyung, Choi, “Two Quantitative Measures of Inlier Distributions for Precise Fundamental Matrix Estimation”, *Pattern Recognition Letter*, Vol. 25, Issue 6, 2004, pp.733-741, 2004
28. Wonjoong Kim, Young-Wook Kim, **Min-Hyung Choi**, Texture Development and Phase Transformation in Liquid-Phase Sintered SIC Ceramics, *Material Science Forum*, Vols. 408-412(2002) pp.1693 -1698, 2002

29. **Min-Hyung Choi**, James F. Cremer, Geometrically-Aware Interactive Object Manipulation, *The Journal of Eurographics Computer Graphics Forum*. Vol. 19, No. 1, pp. 65-76, 2000

Referred Conference Publications

1. Shane Transue, **Min-Hyung Choi**, “Generative Deformation: Procedural Perforation of Elastic Structures” *Proceedings of The IEEE Conference on Robotics and Automation (IEEE ICRA 19)*, in review
2. Breawn Schoun, Shane Transue, Ann C. Halbower, **Min-Hyung Choi**, “Non-Contact Tidal Volume Measurement through Thin Medium Thermal Imaging”, *Proceedings of The IEEE/ACM Conference on Connected Health: Applications, Systems, and Engineering (IEEE CHASE18)*, Accepted for publication. Sept. 2018
3. Shane Transue, Sayed Mohsin Reza, Ann C. Halbower, **Min-Hyung Choi**, “Behavioral Analysis of Turbulent Exhale Flows”, *Proceedings of IEEE Conference on Biomedical and Health Informatics (IEEE BHI 2018)*, pp.42-45, March 2018 (**Best Paper Award, paper acceptance rate 14%**)
4. Breawn Schoun, Shane Transue, Ann C. Halbower, **Min-Hyung Choi**, “Non-Contact Comprehensive Breathing Analysis using Thermal Thin Medium”, *Proceedings of IEEE Conference on Biomedical and Health Informatics (IEEE BHI 2018)*, pp.239-242, March 2018
5. Hawkar Oagaz, Anurag Sable, **Min-Hyung Choi**, Feng Lin, “VRInsole: An Unobtrusive and Immersive Mobility Training System for Stroke Rehabilitation”, *Proceedings of IEEE Conference on Body Sensor Networks (IEEE BSN 2018)*, pp.5-8, March 2018
6. Shane Transue, Yi Li, Nak-Jun Sung, Yoo-Joo Choi, Min Hong, **Min-Hyung Choi**, “Coherent Behavior with Level-of-detail in Cloth Simulation”, *Proceedings of 9th International Conference on Internet Multimedia, Image Processing, HCI and Intelligent Systems (ICONI 2017)*, Dec. 2017 (**Outstanding Paper Award**)
7. **Min-Hyung Choi**, Min Sang Kim, Nak-Jun Sung, Yoo-Joo Choi, Min Hong, “Comparison in Performance of Parallel Deformable Object Simulation between OpenGL and Unity”, *Proceedings of 9th International Conference on Internet Multimedia, Image Processing, HCI and Intelligent Systems (ICONI 2017)*, Dec. 2017
8. Breawn Schoun, Shane Transue, **Min-Hyung Choi**, “Real-time Thermal Medium-based Breathing Analysis with Python”, *Proceedings of ACM/IEEE Super Computing International Conference for High Performance Computing, Networking, Storage and Analysis, 7th Workshop on Python for High-Performance and Scientific Computing (PyHPC 2017)*, Nov. 2017
9. Breawn Schoun, Shane Transue, **Min-Hyung Choi**, “Non-Contact Thermal Medium-Based Breathing Analysis”, *Proceedings of Center of Excellence in Wireless and Information Technology Conference (CEWIT 2017)*, Nov 2017
10. Soo Kyun Kim, Xiao-Yun Duan, and **Min-Hyung Choi**, “Design of a Board Game in Augmented Reality”, *Proceedings of International Conference on Computing Convergence and Applications (ICCCA 2017)*, pp.41-42, Aug. 2017
11. Shane Transue, Phuc Nguyen, Tam Vu, and **Min-Hyung Choi**, "Thermal-Depth Fusion for Occluded Body Skeletal Posture Estimation", *Proceedings of The Second IEEE Conference on Connected Health: Applications, Systems, and Engineering (IEEE CHASE17)*, pp.167-176, Jul. 2017.

12. Phuc Nguyen, Shane Transue, **Min-Hyung Choi**, Ann C Halbower, Tam Vu, “Respiratory Volume Monitoring From Afar Using Wireless Signals”, *Proceedings of American Thoracic Society Novel Diagnostic Approaches to SDB*, pp. A2620-A2620, May 2017
13. Phuc Nguyen, Shane Transue, **Min-Hyung Choi**, Ann C. Halbower, and Tam Vu, "WiKiSpiro: Non-contact Respiration volume Monitoring during Sleep", in *the 8th Annual S3 Workshop (in conjunction with: ACM MobiCom 2016)*, New York, October, 2016. (**Best Paper Award**)
14. Shane Transue, Phuc Nguyen, Tam Vu, and **Min-Hyung Choi**, "Real-time Tidal Volume Estimation using Iso-surface Reconstruction", in *The First IEEE Conference on Connected Health: Applications, Systems, and Engineering (IEEE CHASE)*, pp. 209-218. June, 2016.
15. Shane Transue, **Min-Hyung Choi**, “Interactive Control of Deformable Object Animations through Control Metaphor Pattern Adherence”, *Proceedings of 10th International Conference on Graphics Theory and Applications*, pp.294-305, 2015
16. Shane Transue, **Min-Hyung Choi**, “Deformable Object Behavior Reconstruction Derived through Simultaneous Geometric and Material Property Estimation”, *Proceedings of 11th International Symposium on Visual Computing (ISVC 2015)*, pp.474-485, 2015
17. Wook Song, Hyusub Yum, Hwamin Lee, **Min-Hyung Choi**, Min Hong, “Indoor Positioning System using BLE Beacons with Android Application”, *Proceedings of 7th International Conference on Internet (ICONI 2015)*, pp.221-223, 2015
18. Hwamin Lee, SangWok Han, EunKwang Jeon, Juyoung Kim, Suna Baek, **Min-Hyung Choi**, “IoT Based Smart White Cane for the Blind”, *Proceedings of 10th International Conference on Ubiquitous Information Technologies and Applications (CUTE 2015)*, 2015
19. Shane Transue and **Min-Hyung Choi**, “Intuitive Alignment of Point-Clouds with Painting-Based Feature Correspondence”, *Proceedings of 10th International Symposium on Visual Computing*, pp.746-756, Dec. 2014
20. A. Alonso, **Min-Hyung Choi**, “Automatic Range Scan Point Cloud Registration Using Hierarchical Levels and Feature Recognition Filters”, *Proceedings of 16th International Conference on Geometry and Graphics*, Innsbruck, Austria, Aug. 2014
21. HwaMin Lee, Doo-Soon Park, **Min-Hyung Choi**, “DrugWellness: Smartphone based Drug Recognition and Information System”, *Proceedings of Symposium on Wellness Technology and Service for Future Life Care (Wellness 2014)*, Dec. 2014
22. **Min-Hyung Choi**, M. Alquzi, M. Hong, “Virtual Reality Based Assessment Tool for Measuring Human Perceptual Sensitivity to Erroneous Motion”, *Proceedings of International Conference on Ubiquitous Information Technologies and Applications*, pp 381-385, Dec. 2013
23. S. Transue, **Min-Hyung Choi**, “Enhanced Pre-conditioning Algorithm for the Accurate Alignment of 3D Range Scans”, *Proceedings of International Conference on Computer Graphics and Virtual Reality*, July 2013
24. M. Hong, J. Jeon, D. Oh and **Min-Hyung Choi**, “Implementation of 3D Deformable Objects on Smart Devices Using FFD-AABB Algorithm” *Proceedings of the 7th International Conference on Ubiquitous Information Technologies & Applications*, pp. 833-840, 2012
25. Shaila Abraham and **Min-Hyung Choi**, “Optimization of Collision Handling based on Differential Thresholds of Human Perception”, In *Proceedings of International Conference on Computer Graphics and Virtual Reality*, July 2011
26. Pelak VS, **Min-Hyung Choi**, Jung S, Halliday B, Hager E, Klepitskaya O, Ojemann S, Filley C, Dubin M. “Visuospatial Assessment By Virtual 3D Radial Optic Flow Illusion In

- Healthy Aging, Mild Alzheimer's Disease (AD), And Pre-Deep-Brain Stimulation (DBS) Parkinson's Disease (PD) Subjects." Abstract A-316-0002-01523. *10th Annual International Conference on Alzheimer's and Parkinson's Disease*. Barcelona, Spain. March 9-13th, 2011.
27. Pelak VS, **Min-Hyung Choi**, Jung S, Halliday B, Hager E, Klepitskaya O, Ojemann S, Filley C, Dubin M. "Visuospatial Assessment By Virtual 3D Radial Optic Flow Illusion In Healthy Aging, Mild Alzheimer's Disease (AD), And Pre-Deep-Brain Stimulation (DBS) Parkinson's Disease (PD) Subjects." Abstract 99. *37th Annual North American Neuro-ophthalmology Society Meeting*. Vancouver, BC, Canada. February 2011.
 28. S. Jung and **Min-Hyung Choi**, "A Fast Culling Scheme for Deformable Object Collision Detection Using Spatial Hashing" *Proceedings of 14th International Conference on Geometry and Graphics*, 2010
 29. S. Jung, M. Hong, and **Min-Hyung Choi**, "Free-Form Deformation Axis Aligned Bounding Box", *Proceedings of International Workshop on Computer Graphics, Multimedia and Security*, June 2009
 30. S. Jung, **Min-Hyung Choi**, "Balanced Spatial Subdivision Method for Continuous Collision Detection", *Proceedings of 13th International Conference on Geometry and Graphics*, 2008
 31. **Min-Hyung Choi**, "Domain-Oriented Modeling and Simulation Environments" *Butcher Symposium on Genomics and Biotechnology*, Nov 2007
 32. Hongjun Jeon and **Min-Hyung Choi**, "Interactive Motion Control of Deformable Objects Using Localized Optimal Control", *Proceedings of IEEE International Conference on Robotics and Automation (ICRA07)*, April 2007
 33. Sunhwa Jung, Hongjun Jeon, and **Min-Hyung Choi**, "Physics-Based Deformable Object Simulation in Ubiquitous Computing Environments", *Proceedings of International Conference on Ubiquitous Information Technologies & Applications (ICUT07)*, February 2007
 34. Hongjun Jeon, and **Min-Hyung Choi**, "Controllable simulation of deformable objects using the heuristic optimal control method", *Proceedings of 12TH International Conference on Geometry and Graphics*, August, 2006
 35. Min Hong, **Min-Hyung Choi**, Samuel Welch, Doo-soon Park, "Implicit Constraint Enforcement for Stable and Effective Control of Cloth Behavior" *Proceedings of IEEE International Conference on Hybrid Information Technology*, 2006
 36. Hyun-Jeong Yim, Yoon-Chul Choy, **Min-Hyung Choi**, Soon-Bum Lim, "MPEG-4 BIFS profile for 3D data contents on DMB", *Proceedings of IEEE International Conference on Hybrid Information Technology*, 2006
 37. Eun-Mi Kim, Soon-Bum Lim, Yoon-Chul Choy, **Min-Hyung Choi**, "A Mobile AR System for 3D Virtual Building Simulation Based on GPS and Accelerometer", *Proceedings of Korean Multimedia Society Conference*, 2006
 38. Min Hong, David Osguthorpe, **Min-Hyung Choi**, "Protein Simulation using Fast Volume Preservation", *Proceedings of International Conference on Computational Science Bioinformatics*, 2006
also published at *Springer-Verlag Lecture Notes in Computer Science* Vol. 3991, pp. 308-315, 2006
 39. Min Hong, Samuel Welch, John Trapp, **Min-Hyung Choi**, "Implicit Constraint Enforcement for Rigid Body Dynamic Simulation", *Proceedings of International Conference on Computational Science Visualization and Virtual Reality*, 2006

- also published at *Springer-Verlag Lecture Notes in Computer Science* Vol. 3991, pp. 490-497, 2006
40. Min Hong, Sunwha Jung, **Min-Hyung Choi**, and Samuel Welch, “Fast Volume Preservation for Realistic Muscle Deformation”, *Proceedings of the ACM SIGGRAPH 2005 Sketches*, August 2005
 41. Sunwha Jung, Min Hong, **Min-Hyung Choi**, “An Adaptive Collision Detection and Resolution for Deformable Objects Using Spherical Implicit Surface”, *Proceedings of International Conference on Computational Science Visualization and Virtual Reality*, June 2005 (**Best Student Paper Award**)
also published at *Springer-Verlag Lecture Notes in Computer Science*, Vol. 3514, pp. 735-742, 2005
 42. Min Hong, **Min-Hyung Choi**, Sunwha Jung, Samuel Welch, John Trapp, “Effective Constrained Dynamic Simulation Using Implicit Constraint Enforcement,” *Proceedings of the IEEE International Conference of Robotics and Automation (ICRA 05)*, pp. 4531-4536, April 2005
 43. Sunwha Jung, Min Hong, **Min-Hyung Choi**, “Volume-Preserved Human Organs for Surgical Simulation”, *Proceedings of Central European Multimedia and Virtual Reality Conference*, 2005
 44. Min Hong, Samuel Welch, and **Min-Hyung Choi**, “Intuitive Control of Dynamic Simulation using Improved Implicit Constraint Enforcement”, *Proceedings of Asia Simulation Conference*, October 2004,
also published at *Springer-Verlag Lecture Notes in Computer Science*, Vol. 3398, pp. 315-323, 2005
 45. **Min-Hyung Choi**, Min Hong, and Samuel Welch, “Modeling and Simulation of Sharp Creases”, *Proceedings of the ACM SIGGRAPH 2004 Sketches*, August 2004
 46. Sang-Hoon Kim, Yong Ho Hwang, Hyun-Ki Hong, **Min-Hyung Choi**, “An Improved ICP Algorithm Based on the Sensor Projection for Automatic 3D Registration”, *Proceedings of MICAI* pp. 642-651, April 2004,
also published at *Springer-Verlag Lecture Notes on Artificial Intelligence*, vol.2927, pp. 648-657, 2004
 47. Hongjun Jeon, **Min-Hyung Choi**, Min Hong, “Numerical Stability and Convergence Analysis of Geometric Constraint Enforcement in Dynamic Simulation Systems”, *Proceedings of International Conference on Modeling, Simulation and Visualization Methods*, pp. 207-213, June 2004
 48. Craig Chariton, **Min-Hyung Choi**, “Enhancing Usability of Flight and Air Fare Search Functions for Airline and Travel Web Sites”, *Proceedings of IEEE ITCC 2004: 5th International Conference on Information Technology -Coding and Computing, Web and Information Retrieval Technologies*, pp. 320-325, April 2004
 49. Min Hong, **Min-Hyung Choi**, Chris Lee, “Constraint-based Contact Analysis between Deformable Tissue Structures for Surgical Simulation in Virtual Environment”, *Proceedings of International Conference on Computational Science Visualization and Virtual Reality*, June 2004,
also published at *Springer-Verlag Lecture Notes in Computer Science*, vol. 3037, pp. 300-308, 2004
 50. Min Hong, Ravi Yelluripati, **Min-Hyung Choi**, “Intuitive Control of Deformable Object Simulation using Geometric Constraints”, *Proceedings of International Conference on Imaging Science, Systems, and Technology (CISST 03)*, Vol 2, pp. 563-568, June 2003

51. Yoo-Joo Choi, Min Hong, **Min-Hyung Choi**, Myoung-Hee Kim, “Adaptive Mass-Spring Simulation Using Surface Wavelet”, *Proceedings of International Conference on Virtual Systems and MultiMedia*, Sept. 2002
52. Sang-Hoon Kim, Jung-Kak Seo, Hyun-Ki Hong, **Min-Hyung Choi**, “Iterative Registration of Multiple 3D Data Sets Using Covariance Matrix” *Proceedings of International Conference on Virtual Systems and MultiMedia*, Sept. 2002
53. Craig Chariton, **Min-Hyung Choi**, User Interface Guidelines for Enhancing Usability of Airline Travel Agency E-Commerce Web Site, *Proceedings of ACM Computer Human Interaction Interactive Poster*, April 2002
54. **Min-Hyung Choi**, Biomedical Computing and Visualization, *Proceedings of Butcher Symposium in Genomics and Bio-technology*, November 2002
55. **Min-Hyung Choi**, “Collision and Contact Modeling between Deformable Tissues for Surgical Simulation in Virtual Environments”, *Workshop on Computer Graphics and Visualization for Medical and Bioinformatics Application*, October 2002
56. **Min-Hyung Choi**, Virtual Interaction on World Wide Web, *Proceedings of the UKC Conference*, University of California at Los Angeles, August 1999
57. **Min-Hyung Choi**, James F. Cremer, Geometric Awareness for Interactive Object Manipulation, *Proceedings of the Graphics Interface*, pp. 9-17, May 1999 (**Selected for one of the best papers**)
58. **Min-Hyung Choi**, James F. Cremer, Interactive Manipulation of Articulated Objects with Geometry Awareness, *Proceedings of the IEEE International Conference of Robotics and Automation (ICRA 99)*, pp. 592-598, April 1999
59. **Min-Hyung Choi**, Interaction with Articulated Objects in Virtual Environments, Computer Science Research Forum, The University of Iowa July 1998
60. **Min-Hyung Choi**, Kyung Whan Lee, Visualization of Behavior-Based Object Specification, *Conference Proceedings of Korean Information Society*, Vol. 19, No. 2, 1991
61. **Min-Hyung Choi**, Min Sang Kim, Chan Ki Hong, Kyung Whan Lee, A Study on Reusable Module Retrieval System, *Conference Proceedings of Korean Information Society* Vol. 18, No. 1, 1990

Patents

1. **Min-Hyung Choi**, Shane Transue, US Provisional Patent “Thermal-Depth Fusion for Volumetric 3D Imaging”, USPTO No. 62/558.721, Sept. 14, 2017, CU TTO has filed a US patent on Sept. 14, 2018
2. **Min-Hyung Choi**, Shane Transue, US Provisional Patent “Mobile and Augmented Reality Based Depth and Thermal Fusion Scan”, USPTO No. 62/661.588, April 23, 2018, currently in process for US patent by CU TTO.
3. **Min-Hyung Choi**, Shane Transue, “Non-contact Breathing Activity Monitoring and Analyzing System through Thermal and CO2 Imaging”, CU4496H:303.0017, currently in process for US patent by CU TTO.
4. **Min-Hyung Choi**, Shane Transue, Breawn Schoun, “Non-Contact Breathing Activity Monitoring and Analyzing System through Thermal on Projection Medium Imaging”, CU4497H:303.0018, currently in process for US patent by CU TTO.

Grants and Funded Research

1. PI, "DT Scan: Depth-Thermal Fusion for 3D Crime Scene Reconstruction and Forensic Analysis", National Institute of Justice, \$813,117, pending
2. Co-PI, "Robust and Scalable Gait Identification and Re-Identification for Rapid Evidence Collection and Analysis using 3D Visual Sensor", National Institute of Justice, \$581,564, pending
3. Investigator, NIH T32 training grant application "Interdisciplinary Bioengineering Research Training in Diabetes", May 2018, pending
4. PI, "Advanced 3D Game Software Development", Dogpack Studios, \$40,000, 2018-2020
5. PI, "Early Detection of mTBI in Virtual Reality", ORS CU Denver, \$15,800, 2018-2019
6. Co-Director, "Comcast Media and Technology Center", Comcast, \$5Million, 2016-2019
7. Co-PI "SCH: EXP: RadiOptiMeter: Long-term and Fine-grained Breathing Volume Monitoring for SDB" ACI-1602428, With Dr. T. Vu at Univ. of Colorado Denver, NSF, \$575,000, 2016-2019
8. PI, "Development of Simulation-based Educational Game Program on Financial Numeracy", CU Foundation Employee Services, \$98,500, 2015
9. PI "Texture Enhancement on 3D Range Scan and Visual Rendering", Laser Tech Inc, \$50,000, 2012
10. PI "3D Range Scan Processing and Visual Rendering", Laser Tech Inc, \$115,000, 2011
11. Investigator. "Virtual Reality Assessment of Visuospatial Disorientation in Alzheimer's", IIRG-05-14439, \$360,000, PI Victoria Pelak at University of Colorado, School of Medicine, 2006-2009
12. Co-PI, "Representation of Digital TV contents based on 3D synthetic objects", Information Technology Research Institute, Ministry of Information Technology, Republic of Korea, \$18,839, PI Soon-Bum Lim at Sookmyung University, 2006-2007
13. PI, "Simulation of chromatic reactions in human skin under pressure", The Undergraduate Research Opportunities Program (UROP), Univ. of Colorado at Denver, \$1150, 2005
14. "Computer Game Programming" Web Camp Online Course Development Program, \$1,000, 2006
15. PI "Photo-Realistic Pressure Reactive Skin Texture", Research Experience for Undergraduates, National Science Foundation, \$6000, 2005
16. PI "Constraint-based Adaptive Simulation of Deformable Objects", National Science Foundation CAREER Award ACI-0238521, \$459,854, 2003-2009
17. PI "Collision and Contact Modeling between Deformable Tissues for Surgical Simulation in Virtual Environments", Colorado Advanced Software Institute, 2001-2002, \$39,000
18. Co-PI, "A Study on Image-based Rendering and Layer Decomposition of Images Sequences for Scene Reconstruction", Korean Science and Engineering Foundation, with Dr. Hyunki Hong, \$18,156 2001-2002
19. Geometric Modeling and Simulation Software Grant, Spatial Corporation, \$58,000, 2001
20. Co-PI, Online Course Development Grant, Colorado Institute of Technology, PI Krzysztof Cios Univ. of Colorado at Denver, \$18,000, 2001
21. Co-PI, Ecollege Online Course Development Grant, Ecollege, PI Krzysztof Cios Univ. of Colorado at Denver, \$14,000, 2001
22. PI, Summer Research Fellow Grant, Korean Advanced Institute of Science and Technology, \$4200, 2001
23. PI, Computer Graphics Program Development Grant, Microsoft, \$9,880, 2001

24. PI for a sub-contract, “Modeling FEM based deformable human tissue”, National Library of Medicine, National Institute of Health, PI Vic Spitzer at Univ. of Colorado Health Sciences Center, \$20,556, 2000
25. PI, Post Doctoral Fellow Grant, Univ. of Colorado at Boulder, Denver and Health Sciences Center, \$6000, 2000
26. PI “Interaction techniques for manipulation of rigid-body articulated objects”, Silicon Graphics Corporation, \$14,950, 1999

Teaching and Course Development

- CSCI5800/7800 Virtual and Augmented Reality, New course development 2018
- CSCI4800/5800 Shaders and GPU, New course development 2016
- CSC5595/7595 Computer Animation, New course development 2012
- CSC4920 Computer Game Design and Programming, New course development 2012
- CSC4565/5565 Introduction to Computer Graphics, New course development 2000, major revision in 2005, 2009, 2013, 2017
- CSC5585 Advanced Computer Graphics, New course development 2001, major revision in 2005, 2013
- CSC5573 Operating Systems, New course development 2000
- CSC5583 Topics in Computer Graphics, New course development 2004
- CSC3218 Web Design: JavaScript and Web Graphics, New online course development 2002
- CSC2421 Data Structures and Program Designs, New online course development, major revision in 2005, 2009, 2013, 2017
- CSCI1410 Fundamentals of Computing, major revision (along with CSCI 2312 Object Oriented Programming), 2015

Graduate Students Supervision as Primary Advisor

- Hawkar Oagaz, in progress Ph.D program
- Sayed Reza, in progress Ph.D program
- Breawn Schoun, MS 2018, in progress Ph.D program
- Shane Transue, MS 2014, in progress Ph.D program
- Mohamed Alquzi MS 2014
- Alejandro Alonso MS 2015
- Son Duong MS 2014
- Anthony Greway, MS 2012
- Steve Wilber, MS 2012
- Shaila Abraham, MS 2011
- Thomas McTavish, MS 2008
- Min Hong, Ph.D. 2006
- Jeremiah Jung, MS 2005
- Craig Chariton, MS 2003

- Ravi Yelluripati, MS 2003
- Sunhong Min, MS 2002

Graduate Students Supervision as committee advisor

- Henner Mohr, Ph.D 2018, CSIS at CU Denver
- Mohammed Khojah, Ph.D 2018, CSIS at CU Denver
- Logan Langholz, MS 2017, Bioengineering at CU Denver
- Wiliam Lee, MS 2017, Computer Science at CU Denver
- Andrew Hill, MS 2017, Computer Science at CU Denver
- Gary Borkan, Ph.D 2013, CSIS at CU Denver
- Imlawi Jehad, Ph.D 2013, CSIS at CU Denver
- Jaeheon Jeong, Ph.D 2012, Computer Science at CU Boulder
- Mounika Eakka, MS 2012, Computer Science at CU Denver
- Wei Xu, Ph.D 2012, Computer Science at CU Boulder

Department Services

- Comcast Technology Internship Seminar, Computer Science and Engineering Department, 2018
- Faculty Search Committee Chair, Computer Science and Engineering Department, 2018
- Faculty Search Committee, Computer Science and Engineering Department, 2001, 2013, 2014, 2015, 2017
- Graduate Committee Chair, Computer Science and Engineering Department 2009-2015
- Bylaws Committee Chair, Computer Science and Engineering Department 2005-2008
- Executive Committee (Elected position), Computer Science and Engineering Department, 2002-2005, 2006-2007, 2017-present
- Graduate Committee, Computer Science and Engineering Department, 2000-2016
- Undergraduate Committee, Computer Science and Engineering Department, 2016-present
- Standard and Criteria Committee, Computer Science and Engineering Department, 2000-2008
- Hardware/Equipment Committee, Computer Science and Engineering Department, 2000-2007
- Dept. Chair Search Committee, Computer Science and Engineering Department, 2000

College of Engineering, CU Denver and University System Services

- STEAMposium VR demo and presentation, College of Engineering, 2018
- First Level RTP Committee, College of Engineering, 2011, 2014, 2016
- Open House Presentation, College of Engineering, 2017
- High School Students Outreach Presentation, , College of Engineering, 2010, 2014, 2017
- NSF Career Award Mentoring and Presentation, CU Denver, 2012-2016
- Bioinformatics Professional MBA degree Committee, CU Denver, 2012-2013
- Graduate Program Directors' Council, CU Denver, 2010-2015
- Website Committee, College of Engineering, 2009-2010

- Award Committee, College of Engineering, 2006-2010
- Search Committee, Graduate School Dean, CU Denver, 2009
- Distinguished Professor Committee, CU Denver 2008, 2009
- Apply Yourself Committee, UCDHSC, 2007
- Research and Creative Activities Symposium Committee, CU Denver, 2006, 2007, 20010-2012, 2017
- Bylaws Committee, College of Engineering, 2005-2007
- Faculty Workload Committee, College of Engineering, 2003-2005
- Budget Priority Committee, College of Engineering, 2003-2005

Professional Activities and Services

Grant Review Panel

- NSF CHS CISE CHS review panel, 2015, 2016
- NSF FODAVA review panel, 2009
- NSF CAREER Award review panel, 2008
- NSF MSPA-MCS review panel, 2007
- NSF PASI review panel, 2007
- NIH BRP Bioengineering Research Partnership Grant Study Section, 2005
- NIH SBIR/STTR grant SSS9 (10, 50) Study Section, 2004
- NIH BRP Bioengineering Research Partnership Grant Study Section, 2004
- NSF CISE in Advanced Computing Research division, review panel, 2003
- NIH SBIR/STTR grant SSS9 (10, 50) Study Section, 2003

Chair

- Communication Co-Chair, “IEEE/ACM Smart and Connected Health and Application” 2019
- Conference Co-Chair, “8th International Symposium on Visual Computing” 2012
- Communication Chair, “KOCSEA Symposium” 2011
- Conference Chair, "International Workshop on Computer Graphics and Image Processing" 2009
- Conference Chair, “Workshop on Computer Graphics and Visualization Techniques for Bioinformatics and Medical Applications,” 2002
- Session Chair, “International Conference on Computer Graphics and Geometry”, 2010
- Session Chair, “International Conference on Ubiquitous Technology and Applications”, 2007
- Session Chair, “International Conference on Computer Graphics and Geometry”, 2006
- Session Chair, “Central European Multimedia and Virtual Reality Conference”, 2005

Editorial Board

- Editor-in-Chief, The Journal of Future Game Technology, 2011-2014
- Associate Editor, The Journal of Engineering Letters, 2005-2007
- Editorial Board Member, The Journal of Information Processing Systems, 2008-present
- Editorial Board Member, Transaction on Internet and Information Systems, 2007-2011

Plenary, Keynote Speech

- “Computer Graphics Technology for 3D Games”, International Workshop on Future Game Technology, 2011
- “Physics-based Deformable Object Simulation in Ubiquitous Computing Environments”, IEEE International Conference on Ubiquitous Computing and Application, (ICUT 07) 2007
- “Data Driven Control for Patient Specific Surgical Simulation” The 9th Germany-Korea Joint Workshop on Advanced Medical Image Processing, Korea, 2006
- “Physics-Based Simulation in U-Healthcare” U-Healthcare conference, Korea 2006

Program Committee

- Computer Animation and Social Agents, (CASA) 2006-2018
- International Symposium on Visual Computing, (ISVC) 2005-2018
- International Conference on Computer Graphics Theory and Applications, (GRAPP) 2005-2012
- International Conference on Ubiquitous Computing and Application, (ICUT 07) 2007
- International Workshop in Virtual Reality Interactions and Physical Simulations (VRIPhys) 2005-2009
- IEEE International Conference on Software Engineering Research, Management and Applications (SERA) 2007
- International Conference on Multimedia, Information Technology and its Applications, (MITA) 2006
- International Conference on Hybrid Information Technology, (ICHIT) 2006
- International Workshop on Advanced Multimedia Technology and Applications, (AMTA) 2006
- Central European Multimedia and Virtual Reality Conference 2005
- International Conference on Imaging Science, Systems, and Technology, Las Vegas, NV 2003

Organizing Committee

- International Symposium on Visual Computing, Special Track on Virtual Reality and Medicine, 2005
- Korean-American Scientist and Engineer's Association 6th Midwest Regional conference, Iowa City IA, 1996

General Manager

- Korean-American Scientist and Engineer's Association, Iowa City Chapter, 1995-1996

Reviewer

- ACM SIGCHI, IEEE Visualization, IEEE Robotics and Automation, IEEE Transaction on Robotics, Journal of Advanced Robotics, Journal of Virtual Reality and Broadcasting, Transaction on Internet and Information Systems

Consulting

- The Last Game Board, Consulting for Augmented Reality, 2018
- Zoptic, Consulting for Augmented Reality, 2018

- Idealabs, Consulting for Augmented Reality, 2017-2018
- Laser Tech, Consulting for 3D Laser Scanning, 2012 – 2016
- Sony Entertainment, Consulting for Game Programming 2009
- Quark, Consulting for Advanced Graphics Engine in Quark Express, 2006
- Denver Natural and Science Museum, Consulting for Planetary Visualization Mini Dome Project 2006

Member

- ACM, IEEE Computer, 1996-present

Invited Talk

- Lightning talk, National Science Foundation, “Comprehensive Breathing Activity Monitoring through CO₂ Imaging” 2018
- Patent and Commercialization, “Depth-Thermal Fusion for Strong Authentication”, CU Tech Transfer Office, 2018
- Colloquia, University of Colorado Denver, Dept. of Psychology, “Mental Health in VR” 2018
- Brown-bag Lunch, University of Colorado Denver Comcast Media and Technology Center, “Accelerating Healthcare via VR and AR” 2018
- Colloquia, University of Colorado Anschutz, “Visual Analytics and Mobile Health” 2014
- Colloquia, University of Colorado Denver, “Data Driven Simulation for Realistic Animation” 2013
- Colloquia, University of Seoul, Seoul Korea, “Physic based Modeling and Simulation and Realtime Applications” 2012
- Invited Seminar, GeoEye Systems, Denver Colorado, “Realism and Surrealism in Physically-Based Simulation” 2010
- Colloquia, Yonsei University, Seoul Korea, “Domain-Oriented Modeling and Simulation Environments” 2007
- Colloquia, Hanyang University, Seoul Korea, “Domain-Oriented Modeling and Simulation Environments” 2007
- Invited Seminar, Samsung Research Center, Seoul Korea, “Captured Motion Based Deformable Object Simulation”, 2007
- Colloquia, SoonChunHyang University, Asan Korea, “Domain-Oriented Modeling and Simulation Environments” 2007
- Colloquia, KyungHee University, Suwon Korea, “Domain-Oriented Modeling and Simulation Environments” 2007
- “Realism and Surrealism in Computer Animation (Modeling and Simulation of Deformable Objects)”, Univ. of Colorado at Boulder, Colloquium, 2008
- “Deformable Tissue Simulation for Vocal Cord,” Wilbur James Gould Voice Center, Denver CO, 2006
- “Realism and Surrealism in Physics-Based Animation”, Sookmyung University Korea, 2006
- “Physics-Based Simulation and Control”, Yonsei University Korea, 2006
- “Volume Graphics and Simulation for Medical Applications”, Center for Computational Biology Annual Meeting, 2002

- “Functional Anatomy Simulation,” University of Denver, 2002
- Tutorials: “VR and Medical Applications,” Virtual Reality Research Center, Korean Advanced Institute of Technology (KAIST), Daejun Korea, 2001
- “Modeling and Simulation of Deformable Tissue”, National Institute of Health, 2001
- “Surgical Simulation: Past, Present, and Future,” Department of Computer Science, Korean Advanced Institute of Technology (KAIST), Daejun Korea, 2000
- “Modeling and Animation of Deformable Object for Virtual Surgery,” Department of Electrical Engineering, Seoul National University, Seoul Korea, 2000
- “Surgical Simulation: Past, Present, and Future,” Chung-Ang University, Seoul Korea, 2000
- “Geometry Awareness for Interactive Object Manipulation,” California State Polytechnic University at Pomona, 1999
- “Object Manipulation in Virtual Environment,” University of Kansas, 1999
- “Simulation in Immersed Virtual Environments,” University of Arkansas, 1999