Sung-Eui Yoon

Dept. of Computer Science

Korea Advanced Institute of Science and Technology (KAIST)

373-1 Guseong-dong, Yuseong-gu, Daejeon, 305-701, South Korea

Work: +82-42-350-3531

Fax: +82-42-350-3510

Email: sungeui at gmail dot com

URL:http://sglab.kaist.ac.kr/~sungeui

Education

- **Ph.D., Computer Science**   08/2001-12/2005
    Thesis title: Interactive Visualization and Collision Detection using Dynamic
        Simplification and Cache-Coherent Layouts
    Advisor: Prof. Dinesh Manocha
    University of North Carolina at Chapel Hill, Chapel Hill, NC, USA
- **M.S., Electrical Engineering and Computer Science**   03/1999-02/2001
    Advisor: Prof. Yeong-Gil Shin
    Seoul National University, Seoul, South Korea
- **B.S., Computer Science**   03/1995-02/1999
    Seoul National University, Seoul, South Korea

Research Interests

- Scalable algorithms in the fields of computer graphics, image search, robotics, and other related geometric problems

Professional Experiences

- **Tenured**   3/2015
    Dept. of Computer Science, Korea Advanced Institute of Science and Technology (KAIST)
- **Associate Professor**   9/2011-Present
    Dept. of Computer Science, Korea Advanced Institute of Science and Technology (KAIST)
- **Assistant Professor**   7/2007-8/2011
    Dept. of Computer Science, Korea Advanced Institute of Science and Technology (KAIST)
- **Postdoctoral researcher**   1/2006-6/2007
    Data Analysis Group, CASC, Lawrence Livermore Nat'l Lab.
- **Research Assistant**   1/2002-12/2005
    Gamma and Walkthrough Groups, Dept. Computer Science, UNC-Chapel Hill
- **Summer Internships**   5/2004- 8/2004, 5/2005- 8/2005
    Center for Applied Scientific Computing, Lawrence Livermore National Laboratory (LLNL)
- **Teaching Assistants**   9/1999-12/1999, 3/2000-6/2000, 8/2001-12/2001
    Computer Graphics, Dept. Computer Science, UNC-Chapel Hill
    Computer Graphics and Data Structure, Dept. Computer Science, Seoul National University
- **Software Engineer**   1/2000-6/2001
    3Dmed(http://www.3d-med.com/), Seoul, South Korea
- **Research Assistant**   3/1999-2/2001

Graphics Lab, Seoul National University

- **Undergraduate Research Assistant**   3/1997-8/1998
  Graphics Lab, Seoul National University

Awards/Honors

(Fortunately, some of our work got notable recognitions, which are listed here.)

1. **Test-Of-Time 2006 Award at High Performance Graphics, 2015**
   RT-DEFORM: Interactive Ray Tracing of Dynamic Scenes using BVHs
   Christian Lauterbach, Sung-eui Yoon, David Tuft, Dinesh Manocha
   IEEE Interactive Ray Tracing, 2006
2. **Best Paper Awards at International and Domestic Conferences**
   A. Distinguished paper award at Pacific Graphics 2009
      HPCCD: Hybrid Parallel Continuous Collision Detection using CPUs and GPUs
      DukSu Kim, JaePil Heo, Jaehyuk Huh, John Kim, and Sung-Eui Yoon
   B. Best paper award at IPIU 2015
      Discovering Family Photo using Discriminative Frequent Subgraph
      ChangMin Choi, YoonSeok Lee, Sung-eui Yoon
      Workshop on Image Processing and Image Understanding (IPIU), 2015. 02, Korea,
      poster presentation
3. **Recognition of Service Awards**
   A. Association for Computing Machinery (ACM), 2013, USA
   In Appreciation for Contributions to ACM, Paper Co-Chair, I3D `13,
   B. Association for Computing Machinery (ACM), 2012, USA
   In Appreciation for Contributions to ACM, Conf. Co-Chair, I3D `12
4. **Spotlight paper of the 2013, Sep. issue of IEEE TVCG**
   Scheduling in Heterogeneous Computing Environments for Proximity Queries,
   DukSu Kim, Jinkyu Lee, JungHwan Lee, Insik Shin, John Kim, and Sung-eui Yoon
   IEEE Transaction on Visualization and Computer Graphics* (TVCG), Vol. 19, No. 9, pp.
   1513-1525, 2013 (Presented at ACM I3D 14)
5. **Selected as one of 100 representative research/development results (국가연구개발**
   우수성과 100선), National Science & Technology Commission (국가과학기술위원회),
   South Korea, 2011
   Selected as one of 50 representative research results from National Research
   Foundation (NRF), 2011
   Random-Accessible Compressed Data and their Applications to Computer Graphics,
   Visualization, and Robotics, 2008 ~ 2011
   PI: Sung-eui Yoon
   (Note: NRF is Korean NSF)
6. **IWON assistant professorship from KAIST**
   3 year term title given to assistant professorship (only 9 assistant professors chosen across
   KAIST), Oct., 2010

7. **Invited Submission to IEEE Trans. on Visualization and Computer Graphics**
   Selected papers from ACM Symp. on Solid and Physical Modeling 2008
   ICCD: Interactive Continuous Collision Detection between Deformable Models using Connectivity-Based Culling
   Min Tang, Sean Curtis, Sung-Eui Yoon, and Dinesh Manocha

------------------ Joined KAIST as an assistant professor --------------------------------

8. **Invited Submission to IEEE Trans. on Visualization and Computer Graphics**
   Selected papers from IEEE Visualization 2004
   Quick-VDR: Out-of-Core View-Dependent Rendering of Gigantic Models
   Sung-Eui Yoon, Brian Salomon, Russell Gayle and Dinesh Manocha
9. **ILJU Foundation Scholarship for Advanced Studies**, 2001-2005

Awards/Honors given to My Students

(These are awards/honors given to my students. I listed them here, since these are based on works collaborated with me.)

1. **Outstanding Thesis Awards, KAIST**
   Ph.D. Thesis: JungHwan Lee, 2015
   MS Thesis: YoungWoon Lee, 2013, DongHyuk Kim, 2014
2. **Significant new researcher award, KCGS, 2014**
   Representative recipient: Bochang Moon
3. **3rd place at the graduate level in the Grand Finals**
   ACM Award Banquet, ACM SRC, 2010
   1st place of ACM Student Research Competition Award (ACM SRC)
   ACM SIGGRAPH 2009
   Representative recipient: TaeJoon Kim
   RACBVHs: Random-Accessible Compressed Bounding Volume Hierarchies
   TaeJoon Kim, Bochang Moon, Duksu Kim, and Sung-Eui Yoon
4. **Best programming award**
   NVIDIA CUDA programming contest, Korea, 2010
   Representative recipient: DukSu Kim
   HPCCD: Hybrid Parallel Continuous Collision Detection using CPUs and GPUs
   DukSu Kim, JaePil Heo, Jaehyuk Huh, John Kim, and Sung-Eui Yoon

Monograph

1. **Real-Time Massive Model Rendering**
   Synthesis Lectures on Computer Graphics and Animation
   Sung-eui Yoon, Enrico Gobbetti, David Kasik, and Dinesh Manocha
   2008, 122 pages

Morgan & Claypool Publishers

Refereed Journal Publications

* : SCI (Science Citation Index)-listed journal   *+ : SCI-E (Science Citation Index - Extended)-listed journals*

2. **Adaptive Rendering with Linear Predictions**
   Bochang Moon, Jose A. Iglesias-Guitian, Sung-Eui Yoon, Kenny Mitchell
   ACM SIGGRAPH (ACM Tran. on Graphics), 2015

3. **Recursive Path Planning Using Reduced States for Car-like Vehicles on Grid Maps**
   Sangyol Yoon, Sung-Eui Yoon, Unghui Lee, and David Hyunchul Shim
   IEEE Transactions on Intelligent Transportation Systems, 2015

4. **Spherical Hashing: Binary Code Embedding with Hyperspheres**
   Jae-Pil Heo, Youngwoon Lee, Jungfeng He, Shih-fu Chang, and Sung-eui Yoon
   (accepted at) IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2015

5. **Recent Advances in Adaptive Sampling and Reconstruction for Monte Carlo Rendering**
   M. Zwicker, W. Jarosz, J. Lehtinen, B. Moon, R. Ramamoorthi, F. Rousselle, P. Sen, C. Soler, and S.-E. Yoon
   (Accepted at) State of The Art Report, Eurographics (Computer Graphics Forum), 2015

6. **Object tracking mask-based NLUT on GPUs for real-time generation of holographic videos of three-dimensional scenes**
   Min-Woo Kwon, Seung-Cheol Kim, Sung-Eui Yoon, Yo-Sung Ho, Eun-Soo Kim
   Optics Express, Vol. 23, Iss. 3, pp. 2101-2120, 2015

------------------ Promoted to a tenured professor ---------------------------------

7. **Adaptive Rendering based on Weighted Local Regression**
   Bochang Moon, Nathan Carr, and Sung-Eui Yoon
   (Accepted at) ACM Transactions on Graphics*, 2014 (planned to be presented at SIG. 15)

8. **Quadra-Embedding: Binary Code Embedding with Low Quantization Error**
   Youngwoon Lee, Jae-Pil Heo, and Sung-eui Yoon
   (Accepted at) Computer Vision and Image Understanding (CVIU), 2014
   Its earlier version was presented at Asian Conference on Computer Vision (ACCV), 2012 (oral paper)

9. **Selective retraction-based RRT planner for various environments**
   Junghwan Lee, OSung Kwon, Liangjun Zhang, and Sung-Eui Yoon
   IEEE Transaction on Robotics* (T-RO), 2014 (to appear)

10. **Metro Transit-Centric Visualization for City Tour Planning**
    Pio Claudio and Sung-Eui Yoon
    Computer Graphics Forum+ (the special issue on the Eurographics Conference on Visualization (EuroVis)), 2014

11. **T-ReX: Interactive Global Illumination of Massive Models on Heterogeneous Computing Resources**
Tae-Joon Kim, Xin Sun, and Sung-eui Yoon
IEEE Transaction on Visualization and Computer Graphics* (TVCG), 2014
Presented at ACM I3D 14

12. **Scheduling in Heterogeneous Computing Environments for Proximity Queries,**
DukSu Kim, Jinkyu Lee, JungHwan Lee, Insik Shin, John Kim, and Sung-eui Yoon
IEEE Transaction on Visualization and Computer Graphics* (TVCG), Vol. 19, No. 9, pp. 1513-1525, 2013
Chosen as the spotlight paper for the September issue of IEEE TVCG
Presented at ACM I3D 14

13. **Robust Image Denoising using a Virtual Flash Image for Monte Carlo Ray Tracing**
Bochang Moon, Jong Yun Jun, JongHyeob Lee, KunHo Kim, Toshiya Hachisuka, and Sung-eui Yoon
Computer Graphics Forum+, Vol. 32, No. 1, pp. 139-151, 2013

14. **Probabilistic Cost Model for Nearest Neighbor Search in Image Retrieval**
KunHo Kim, M. Hasan, Jae-Pil Heo, Yu-wing Tai, and Sung-eui Yoon
Computer Vision and Image Understanding*, 116, 2012, pp. 991-998

15. **A Mobile 3D Display Processor with A Bandwidth-Saving Subdivider**
Seok-Hoon Kim, Sung-eui Yoon, Sang-Hye Chung, Young-Jun Kim, Hong-Yun Kim, Kyusik Chung, Lee-Sup Kim
IEEE Transactions on Very Large Scale Integration Systems (VLSI)*, 2012

16. **VolCCD: Fast Continuous Collision Detection Culling between Deforming Volume Meshes**
Min Tang, Dinesh Manocha, Sung-eui Yoon, Peng Du, Jae-Pil Heo, Ruofeng Tong
ACM Transactions on Graphics*, 2011
Presented at ACM SIGGRAPH 2012

------------------ Promoted to an associate professor --------------------------------

17. **Multi-Resolution Cloth Simulation**
YongJoon Lee, Sung-eui Yoon, SeungWoo Oh, DukSu Kim, Sungphee Choi
Computer Graphics Forum+ (Pacific Graphics), 2010

18. **Cache-Oblivious Ray Reordering**
Bochang Moon, YongYoung Byun, TaeJoon Kim, Pio Claudio, and Sung-Eui Yoon
ACM Transactions on Graphics*, Vol. 29, No. 3, 2010
Presented at SIGGRAPH 2011

19. **HCCMeshes: Hierarchical-Culling oriented Compact Meshes**
TaeJoon Kim, YongYoung Byun, Yongjin Kim, Bochang Moon, SeungYong Lee, Sung-Eui Yoon
Computer Graphics Forum+ (Eurographics), vol. 29, no. 2, 2010

20. **HPCCD: Hybrid Parallel Continuous Collision Detection using CPUs and GPUs**

DukSu Kim, JaePil Heo, Jaehyuk Huh, John Kim, and Sung-Eui Yoon

Computer Graphics Forum+ (Pacific Graphics), vol. 28, no. 7, pp. 1791 - 1800, 2009

Received a distinguished paper award, equivalent to a best paper award in other conferences

21. **RACBVHs: Random-Accessible Compressed Bounding Volume Hierarchies**

TaeJoon Kim, Bochang Moon, Duksu Kim, and Sung-Eui Yoon

IEEE Transaction on Visualization and Computer Graphics* (TVCG), 2010

Its poster received 1st place award at ACM student research competition held at ACM SIGGRAPH 09

It advanced to the Grand Finals and received 3rd place award at the graduate-level

22. **ICCD: Interactive Continuous Collision Detection between Deformable Models using Connectivity-Based Culling**

Min Tang, Sean Curtis, Sung-Eui Yoon, and Dinesh Manocha

IEEE Transaction on Visualization and Computer Graphics* (TVCG), pp. 544-557, July/August 2009 (vol. 15 no. 4)

(Invited submission to a special issue from papers of ACM SPM 08)

23. **ReduceM: Interactive and Memory Efficient Ray Tracing of Large Models**

Christian Lauterbach, Sung-Eui Yoon, Ming Tang, and Dinesh Manocha

Computer Graphics Forum+, Vol. 27, No. 4, pp. 1313-1321 (and Eurographics Symp. on Rendering), 2008

24. **Adjacency-based Culling for Continuous Collision Detection**

Min Tang, Sung-Eui Yoon, and Dinesh Manocha

The Visual Computer+, Vol. 24, No. 7, pp. 545-553 (Computer Graphics International Conf.), 2008

25. **Massive Model Rendering Techniques**

Andreas Dietrich, Enrico Gobbetti, and Sung-Eui Yoon

IEEE Computer Graphics and Applications*, Vol. 26., No. 6 (Nov/Dec), pp. 20-34, 2007

Special issue on Real-time interaction with complex models

------------------ Joined KAIST as an assistant professor --------------------------------

26. **Random-Accessible Compressed Triangle Meshes**

Sung-Eui Yoon and Peter Lindstrom

IEEE Transaction on Visualization and Computer Graphics*, Vol. 13, No. 6, pp. 1536 – 1543 (and IEEE Visualization), 2007 (acceptance rate: 25%)

27. **R-LODs: Fast LOD-based Ray Tracing of Large Models**

Sung-Eui Yoon, Christian Lauterbach, and Dinesh Manocha

The Visual Computer+ (Pacific Graphics), Vol. 22, No. 9, pp. 772-784, (Oct.) 2006 (acceptance rate: 17%)

28. **Mesh Layouts for Block-Based Caches**

Sung-Eui Yoon and Peter Lindstrom

IEEE Transactions on Visualization and Computer Graphics* (TVCG) (and IEEE Visualization), Vol. 12. No. 5. pp. 1213-1220, (Nov.) 2006

29. **Cache-Efficient Layouts of Bounding Volume Hierarchies**

Sung-Eui Yoon and Dinesh Manocha

Computer graphics forum+, Vol. 25, No. 3 (Eurographics), pp. 507-516 , (Sep.) 2006 (acceptance rate: 17%)

30. **Cache-Oblivious Mesh Layouts**

Sung-Eui Yoon, Peter Lindstrom, Valerio Pascucci, and Dinesh Manocha

ACM Transactions on Graphics* (ACM SIGGRAPH), Vol. 24, No. 3, pp. 886-893, 2005 (acceptance rate: 21%)

31. **Quick-VDR: Out-of-Core View-Dependent Rendering of Gigantic Models**

Sung-Eui Yoon, Brian Salomon, Russell Gayle and Dinesh Manocha

IEEE Transaction on Visualization and Computer Graphics* (TVCG), Vol. 11, No. 4, pp. 369-382, 2005 (Invited submission to a special issue from papers of IEEE Visualization 04)

32. **Interactive Shadow Generation in Complex Environments**

Naga Govindaraju, Brandon Lloyd, Sung-Eui Yoon, Avneesh Sud and Dinesh Manocha

ACM Transactions on Graphics* (ACM SIGGRAPH), 2003 (acceptance rate: 19%)

Refereed Conference Publications

33. **Performance Driven Redundancy Optimization of Data Layouts for Walkthrough Applications**

Jia Chen, Shan Jiang, Zachary Destefano, Sungeui Yoon, M. Gopi

Computer Graphics International (CGI), 2015

34. **Out-of-Core Proximity Computation for Particle-based Fluid Simulations**

Duksu Kim, Myung-Bae Son, Young J. Kim, Jeong-Mo Hong, and Sung-Eui Yoon

(To appear at) High Performance Graphics, 2014

35. **Distance Encoded Product Quantization**

Jae-Pil Heo, Zhe Lin, and Sung-Eui Yoon

IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2014

36. **PRISM: A System for Weighted Multi-Color Browsing of Fashion Products**

Donggeun Yoo, Kyunghyun Paeng, Sunggyun Park, Jungin Lee, Seungwook Paek, Sung-Eui Yoon, and In So Kweon,

Demo track of WWW 2014 (To appear) (acceptation ratio: 33%)

37. **PROT: Productive Regions-Oriented Task space path planning for hyper-redundant manipulators**

Junghwan Lee and Sung-eui Yoon

IEEE International Conf. on Robotics and Automation (ICRA), 2014 (To appear)

38. **Cloud RRT*: Sampling Cloud based RRT***

Donghyuk Kim, Junghwan Lee, Sung-Eui Yoon

IEEE International Conf. on Robotics and Automation (ICRA), 2014 (To appear)

39. **P-RPF: Pixel-based Random Parameter Filtering for Monte Carlo Rendering**

Hyosub Park, Bochang Moon, Soomin Kim, Sung-Eui Yoon

CAD/Graphics, 2013

40. **VLSH: Voronoi-based Locality Sensitive Hashing**

Tieu Lin Loi, Jae-Pil Heo, Junghwan Lee, and Sung-eui Yoon

IEEE/RSJ Int. Conf. on Intelligent Robots and Systems (IROS), 2013

41. **Stereotype-based Semantic Expansion for image retrieval**

Jungin Lee, OSung Kwon, Youngwoon Lee, and Sung-eui Yoon

ICME (short paper), July, 2013

42. **Quadra-Embedding: Binary Code Embedding with Low Quantization Error**

Youngwoon Lee, Jae-Pil Heo, and Sung-eui Yoon

Asian Conf. on Computer Vision (ACCV), Nov. 2012

(Accepted as an oral paper, whose acceptance ratio is 4%)

43. **Spherical Hashing**

Jae-Pil Heo, Youngwoon Lee, Jungfeng He, Shih-fu Chang, and Sung-eui Yoon

IEEE Conf. on Computer Vision and Pattern Recognition (CVPR), 2012, USA

44. **SR-RRT: Selective Retraction-based RRT Planner**

Junghwan Lee, OSung Kwon, Liangjun Zhang, and Sung-eui Yoon

IEEE International Conf. on Robotics and Automation (ICRA), May, 2012, USA

45. **IRIW: Image Retrieval based Image Watermarking for Large-Scale Image Databases**

Jong Yun Jun, KunHo Kim, Jae-Pil Heo, and Sung-eui Yoon

International Workshop on Digital-Forensics and Watermarking (IWDW), Oct. 2011

------------------ Promoted to an associate professor --------------------------------

46. **Data Management for SSDs for Large-Scale Interactive Graphics Applications**

Behzad Sajadi, Shan Jiang, Jae-Pil Heo, Sung-Eui Yoon, M. Gopi,

ACM Symp. on Interactive 3D Graphics and Games (I3D), Feb, 2011

47. **FASTCD: Fracturing-Aware Stable Collision Detection**

Jae-Pil Heo, Joon-Kyung Seong, DukSu Kim, Miguel A. Otaduy, Jeong-Mo Hong, Min Tang, and Sung-Eui Yoon

ACM SIGGRAPH/Eurographics Symp. on Computer Animation (SCA), July, 2010

48. **Interactive Content-Aware Zooming**

Pierre-Yves Laffont, Jong Y. Jun, Christian Wolf, Yu-Wing Tai, Khalid Idrissi, George Drettakis, and Sung-Eui Yoon

Graphics Interface, 2010

49. **Bounds on the Geometric Mean of Arc Lengths for Bounded-Degree Planar Graphs**

Mohammad K. Hasan, Sung-Eui Yoon, and Kyung-Yong Chwa

Frontiers of Algorithmics Workshop, 2009

50. **A Novel Page-Based Data Structure for Interactive Walkthroughs**

B. Sajadi, Y. Huang, P. Diaz-Gutierrez, S.-E. Yoon, and M. Gopi

ACM SIGGRAPH Symp. on Interactive 3D Graphics and Games, (Feb.) 2009

51. **Interactive Continuous Collision Detection between Deformable Models using Connectivity-based Culling**

Min Tang, Sean Curtis, Sung-Eui Yoon, and Dinesh Manocha

ACM Symp. on Solid and Physical Modeling, pp. 25-36, June, 2008

52. **Technical Strategies for Massive Model Visualization**
    Enrico Gobbetti, David Kasik, and Sung-Eui Yoon
    Proc. ACM Solid and Physical Modeling Symposium, pp. 405 – 415, 2008

------------------ Joined KAIST as an assistant professor --------------------------------

53. **Ray-Strips: A Compact Mesh Representation for Interactive Ray Tracing**
    Christian Lauterbach, Sung-Eui Yoon, and Dinesh Manocha
    IEEE Symposium on Ray Tracing, pp. 19-26, (Sep.) 2007
54. **Ray Tracing Dynamic Scenes using Selective Restructuring**
    Sung-Eui Yoon, Sean Curtis, and Dinesh Manocha
    Eurographics Symp. on Rendering, pp. 73-84, 2007
55. **RT-DEFORM: Interactive Ray Tracing of Dynamic Scenes using BVHs**
    Christian Lauterbach, Sung-Eui Yoon, David Tuft, and Dinesh Manocha
    IEEE Symposium on Interactive Ray Tracing, pp. 39 – 45, Sep. 2006
56. **Warping and Partitioning for Low Error Shadow Maps**
    Brandon Lloyd, David Tuft, Sung-Eui Yoon, and Dinesh Manocha
    Eurographics Symposium on Rendering, pp. 215 – 226, 2006
57. **Quick-VDR: Interactive View-Dependent Rendering of Massive Models**
    Sung-Eui Yoon, Brian Salomon, Russell Gayle and Dinesh Manocha
    IEEE Visualization, pp. 131-138, 2004 (acceptance rate: 27%) (Nominated for a best paper)
58. **Fast Collision Detection between Massive Models using Dynamic Simplification**
    Sung-Eui Yoon, Brian Salomon, Ming Lin, and Dinesh Manocha,
    ACM SIGGRAPH/Eurographics Symposium on Geometry Processing (SGP), pp. 136 – 146,
    2004, Nice, France (acceptance rate: 29%)
59. **Interactive View-dependent Rendering with Conservative Occlusion Culling in Complex Environments**
    Sung-Eui Yoon, Brian Salomon and Dinesh Manocha,
    IEEE Visualization, 2003, Seattle, USA (acceptance rate: 32%)
60. **Interactive Visibility Culling for Large Environment using Occlusion-Switches**
    Naga Govindaraju, Avneesh Sud, Sung-Eui Yoon, and Dinesh Manocha
    Proc. ACM Symposium on Interactive 3D Graphics (I3D), 2003 (acceptance rate: 26%)

Miscellaneous Publications
61. **Web-Scale Image Retrieval and Its Novel Applications**
    Sung-eui Yoon
    Web Science Track, World Wide Web (WWW), 4 pages, 2012, France
62. **Recent Research Trends of Interactive Massive Model Visualization (대용량 모델 가시화 기술의 최신 연구 동향)**
    Sung-Eui Yoon
    CAD/CAM Review, Korean CAD/CAM (한국 CAD/CAM 학회지), Vol. 15, No. 1, 2009

Written in Korean

63. **Parallel Occlusion Culling for Interactive Walkthroughs using Multiple GPUs**
Naga Govindaraju, Avneesh Sud, Sung-Eui Yoon, and Dinesh Manocha
Workshop on Commodity-Based Visualization Clusters (CCViz02), 2002

Technical Reports

64. **NBNN-DF: NBNN with Discriminative Features**
OSung Kwon, JungIn Lee, and Sung-eui Yoon
Tech. report, KAIST, 2012

Domestic Publications

1. **Discovering Family Photo using Discriminative Frequent Subgraph**
최창민, 이윤석, 윤성의
영상처리 및 이해에 관한 워크샵 (IPIU), 2015. 02
우수논문상 수상 (포스터 발표 부문)

2. **컴퓨터 그래픽스 연구 현황: 1부 실세계로의 접근 (Research Overview of Computer Graphics: Achieving Realism)**
윤성의 (Sung-eui Yoon), 이승용, 이제희, 임인성, 정규만
한국컴퓨터그래픽스 학회, Vol 18, No. 2, P. 17~33, 2012

3. **대규모 전장공간의 실시간 렌더링 기법 (Real-Time Rendering for Massive Battlefields)**
김영현, 김태준, 윤성의 (Sung-eui Yoon)
한국군사과학기술학회, 2012

4. **압축을 이용한 디지털 리소그래피 3차원 패턴의 효율적인 전송 (Effective Transmission of 3D Pattern using Compression for Digital Lithography)**
김태준, 이종협, 김영현, 윤성의 (Sung-eui Yoon)
차세대 리소그래피 학술대회, 2012

5. **도시 교통 시뮬레이션 (Urban mobility simulation)**
김경아, 김덕수, 윤성의 (Sung-Eui Yoon)
한국컴퓨터그래픽스학회논문지, 2011

6. **3D 텍스쳐 매핑 하드웨어 하에서 법선 벡터 블렌딩을 이용한 가속화된 볼륨 렌더링 (Accelerated Volume Rendering based on 3D Texture Mapping Hardware using Normal Blending)**
윤성의 (Sung-eui Yoon) and 신영길
정보과학회논문지, 2001

Patents

1. **Multi-Resolution Cloth Simulation Method Using Simplified Linear System**
   YongJoon Lee, Sung-eui Yoon, SeungWoo Oh, DukSu Kim, Sungphee Choi
   10-1215441, South Korea, filed at 2011.03 and issued at 2012.12.18
2. **System and Method for Image Retrieval based Image Watermarking**
   JongYun Jeon, JaePil Heo, Kunho Kim, Sung-Eui Yoon
   10-1206275-00-00, South Korea, filed at 2010.12 and issued at 2012.11.23
3. **Parallel Collision Detection Method based on Inter Collision Detection and Computer Readable Media**
   DukSu Kim, JaePil Heo, Jaehyuk Huh, John Kim, and Sung-Eui Yoon
   10-1084980, South Korea, filed at 2009.08 and issued at 2011.11.14
4. **Hybrid Parallel Collision Detection using Multi-Core CPUs and GPUs.**
   DukSu Kim, JaePil Heo, Jaehyuk Huh, John Kim, and Sung-Eui Yoon
   10-1013784, South Korea, filed at 2009.8.31 and issued at 2011.02.01

Courses/Tutorials at Conferences

1. **Recent Advances in Image Space Adaptive Sampling and Reconstruction**
   i. Speakers: Pradeep Sen, Matthias Zwicker, Fabrice Rousselle, Sung-eui Yoon, Nima
      Tutorial, ACM SIGGRAPH 15
   ii. Zwicker, W. Jarosz, J. Lehtinen, B. Moon, R. Ramamoorthi, F. Rousselle, P. Sen, C.
      Soler, and S.-E. Yoon
      STAR talk, State of The Art Report, EG (CGF), 2015
2. **Large-Scale Image Search and Classification**
   iii. Lecturer: Sung-eui Yoon
      National Association of Cognitive Science Industries (NACSI,
      한국인지과학산업회), Dec. 2014
   iv. Lecturer: Sung-eui Yoon
      Machine Learning School, KISSE, Aug., 2014
3. **Robot motion planning and applications**
   Organizer: Sung-eui Yoon
   Lecturers: David Shim, Sunghee Lee, Young J. Kim, and Sung-eui Yoon
   KROS (Korea Robotic Society), 2014
4. **High-quality rendering**
   v. Lecturer: Sung-eui Yoon
      Summer School, KCGS, 2014
   vi. Organizer: Sung-eui Yoon
      Lecturers: Insung Im, Kiju Park, and Sung-eui Yoon
      (Discussed rendering for digital contents)
      Korea HCI, 2013
5. **GPU workshop**
   Organizer: Young J. Kim
   Lecturers: H.G. Ryu, T.Y. Kim, T.H. Lee, I.K. Park, J.K. Seong, J.J. Lee, and S.-E. Yoon

Korea Computer Graphics Society, June, 13 and
Korea HCI, 2013

6. **Recent Advances in Real-Time Collision and Proximity Computations for Games and Simulations**

    vii.   Organizer: Sung-eui Yoon
            Lecturers: Erwin Courmans, Stephen Frye, Takahiro Harada, and Sung-eui Yoon
            Eurographics 2012

------------------ Promoted to an associate professor --------------------------------

    viii.   Organizer: Sung-eui Yoon and Young J. Kim
            Lecturers: Takahiro Harada, Young J. Kim, Sung-eui Yoon
            ACM SIGGRAPH Asia 2010

    ix.   Organizer: Sung-eui Yoon and Dinesh Manocha
            Lecturers: Erwin Courmans, Richard Tonge, Dinesh Manocha, Young J. Kim, Sung-eui Yoon
            ACM SIGGRAPH 2010

7. **Interactive Massive Model Rendering**

    i.   Organizer: Sung-eui Yoon and David Kasik
            Lecturers: E. Gobbetti, D. Kasik, D. Manocha, R. Pajarola, P. Slusallek, and S-E, Yoon
            IEEE Visualization 2009

    ii.   Organizer: Sung-eui Yoon
            Lecturers: A. Dietrich, E. Gobbetti, D. Manocha, F. Marton, R. Pajarola, P. Slusallek, S-E, Yoon
            ACM SIGGRAPH Asia 2008

    iii.   Organizer: David Kasik
            Lecturers: A. Dietrich, E. Gobbetti, D. Manocha, F. Marton, P. Slusallek, A. Stephens, S-E, Yoon
            ACM SIGGRAPH Class, 2008

    iv.   Lecturers: Enrico Gobbetti, David Kasik, and Sung-Eui Yoon
            Mini-Symposium, Proc. ACM Solid and Physical Modeling Symposium 08
            Offered in a plenary session

    v.   Organizer: David Kasik
            Lecturers: B. Bruderlin, W. Correa, A. Dietrich, E. Gobbetti, D. Manocha, F. Marton, I. Quilez, P. Slusallek, A. Stephens, S-E, Yoon
            ACM SIGGRAPH Course, 2007

------------------ Joined KAIST as an assistant professor --------------------------------

    vi.   D. Kasik, D. Manocha, S. Yoon, A. Stephens. B. Bruderlin, P. Slusallek, A. Dietrich, E. Gobbetti, F. Marton, W. Correa, I. Quilez

Eurographics 2006, Vienna, Austria
8. **State of the Art in Interactive Ray Tracing**
Course presenter
ACM SIGGRAPH Course, 2006

Invited Talks/ Presentations

1. **High-Performance Rendering using Heterogeneous Resources**
   a. Collaborative Conf. on 3D & Material Research, June, 14
2. **Web-Scale Image Retrieval and Its Novel Applications**
   b. Hanyang Univ., Apr.-22, 2013
   c. Big data center, ETRI, Jan., 2013
   d. ETRI, Sep., 2012
3. **Collision Detection for Large-Scale Deforming Models**
   GPU Technology Conference (GTC), USA, 2013
   (Korean) HCI, Korea, Jan-27, 2010
4. **Scalable Graphics/Geometric Algorithms**
   e. Shonan Meeting on Big Data Visual Analytics, Nov., Japan 15
   f. KAIST-MADALGO workshop, June, 15
   g. Big Data Workshop, HongKong, 14
   h. Collaborative Conf. on 3D & Material Research, June, 13
   i. Korea Computer Graphics Society (KCGS), June, 2013
   j. Samsung Heavy Industry, Apr, 2013
   k. US-Korea Conference on Science, Technology, and Entrepreneurship (UKC), Aug, 2012
   l. Korea Univ., May, 2012
   m. GIST, Apr, 2012
   n. The First Wednesday Multidisciplinary Forum (EEWS & CS), KAIST, Jan, 2012
   o. Seoul National Univ., Nov, 2011
   p. SungKunKwan Univ., Oct., 2011
   q. INUS Technology, Inc., Korea, Sep., 2011

------------------ Promoted to an associate professor --------------------------------

   r. CSAIL, MIT, Feb., 2011
   s. DDRSoft, Korea, Oct., 2010
   t. Korea Game Conference, Sep., 2010
   u. National Cheng-Kung Univ. Taiwan, Aug., 2010
   v. DigitalAria, South Korea, Apr-21, 2010
   w. Univ. of North Carolina at Chapel Hill, USA, 2009
   x. e-Heritage, Microsoft Research Asia, Beijing, China, 2008
   y. Polytechnic univ., NY, USA, 2008
   z. POSTECH, Apr., 2008
   aa. Samsung Advanced Institute of Technology (SAIT), Dec., 2007

    bb. Korea University, Nov, 2007

    cc. Dept. of CS Colloquium, KAIST, Oct 2007

    dd. Electronics and Telecommunications Research Institute (ETRI), Oct 2007

5. **Scalable Graphics Algorithms and their Applications to Content Creations**
   International Symp. for Arts and Contents, Korea, 2009

6. **Scalable Rendering of Large-Scale eHeritage Data**
   e-Heritage, Microsoft Research Asia, Dun Huang China, 2009

7. **Interactive Photo-Realistic Rendering**
   a. Samsung Tech. Conference, 2009
   b. Samsung Tech. Conference, 2008

8. **Interactive Massive Model Rendering using GPUs**
   a. Korea Computer Congress (KCC) GPU Workshop, 2009 and 2008
   b. NVIDIA Round Table Meeting, Seoul, Korea, 2008

9. **Cache-Coherent Layouts of Meshes and Graphs**
   a. Korean symposium on CAD/CAM, Dec, 2007
   b. Workshop on Edge Computing Using New Commodity Architectures, 2006 (Poster)
   c. Workshop of Massive Geometric Data Sets 05 (in connection with Sym. of Computational Geometry 05)

10. **LOD techniques for Ray Tracing**
   a. Electronics and Telecommunications Research Institute (ETRI), Feb., 2008

11. **Interactive Physically-based Cloth Simulation**
   a. Samsung Advanced Institute of Technology (SAIT), Mar., 2008

------------------ Joined KAIST as an assistant professor --------------------------------

12. **Ray Tracing Dynamic Scene using Selective Restructuring**
   Sung-Eui Yoon, Sean Curtis, and Dinesh Manocha
   ACM SIGGRAPH Sketch, 2007, USA (acceptance rate: 19%)

13. **R-LODs: Fast LOD-Based Ray Tracing of Massive Models**
   Sung-Eui Yoon, Christian Lauterbach and Dinesh Manocha
   ACM SIGGRAPH Sketch, 2006, Boston, USA (acceptance rate: 23%)

14. **Quick-VDR: Interactive View-Dependent Rendering of Massive Models on Commodity GPU**
   a. ACM SIGGRAPH Sketch, 2004, LA, USA.
   b. ACM Workshop on General Purpose Computing on Graphics Processors, 2004, (Poster)

15. **Parallel Occlusion Culling for Interactive Walkthroughs using Multiple GPUs**
   Naga Govindaraju, Avneesh Sud, Sung-Eui Yoon, and Dinesh Manocha
   Workshop on Commodity-Based Visualization Clusters (CCViz02), 2002

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Software System

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1. **T-Rex source codes** (2014): source codes of performing interactive photon mapping for massive models using heterogeneous computing resources

2. **Hashing codes** (2012): Codes generating binary codes based on Spherical Hashing and Quadra Embedding
   (over 150 download during the first year from its released year, 2012)
3. **OpenCCD** (2009): A library that performs continuous collision detection while utilizing heteroneous many-core architectures including CPUs and GPUs
   (over 130 download between 2010 and 2013)
4. **OpenRAM** (2007): A library supporting random accesses on the compressed triangle meshes
   (over 100 download during Oct. 2007 ~ July, 2010)
5. **OpenCCL** (2005): A library that computes cache-coherent layouts of meshes and graphs
   (Over 300 downloads during Aug, 2005 ~ 2009)

Media/Press Coverage

1. 2013 Annual R&D Report, KAIST: Our heterogeneous parallel computing techniques were chosen as research highlights of 2013 and covered in the Annual R&D Report, May, 2014
2. Ray tracing results for the Boeing company, LiveScience (in cooperation with the (U.S.A.) National Science Foundation), Mar – 23. 2010
3. Recent Research Results of SGLab., KAIST Times, Dec. 2009
4. BVHs and Memory Coherence, Ray tracing news, Vol 19, No 1, September 2006,
5. Cache-Oblivious Mesh Layout, a part of ACM SIGGRAPH technical video, Electronic Theater, 2005
6. Interactive Shadow Generation in Millimeter Magazine, June 2003
7. Realistic Shadow Generation in ExtremeTech Magazine, April 2003

Selected Cover Images

1. An image of a cloth simulated by our multi-resolution cloth simulation method, Pacific Graphics, 2010
2. An image of N-body simulation that is powered by hybrid parallel continuous collision detection, back cover, Pacific Graphics, 2009
3. A complex view of an iso-surface model extracted from a turbulence simulation, front cover, IEEE Visualization proceeding 2004

Consulting / External Lecture

1. GPU Computing
   Korean Intellectual Property Office (특허청), Nov., 2012
2. Remote Large-Scale Rendering
   KISTI (Korea Institute of Science and Technology Information), Aug, 2010
3. Introduction to Computer Graphics
   ETRI, May~July, 2010
   ETRI, Oct.~Nov., 2009
4. Interactive Photo-Realistic Rendering
   Samsung Electronics, Nov., 2008 ~ Oct.., 2009

Contracts and Grants

Total external funding: 1,015M Korean Won (2007 ~ 2010)

Current support:

1. SW StarLab on proximity computing, IITP, 300M won ($300K) per year, PI, 2015~2022
2. Multi-resolution modeling and simulation (M&S), ADD, 50M won ($50K) per year, PI, 2011 ~ 2015
3. Cache-friendly algorithms for large-scale model rendering, NRF, 50M won ($50K), PI, 2013~2016
4. Exo-brain, MKE/KEIT, 80M won ($80K) per year, co-PI, 2013~2017
5. Next-Generation Image Systems, Samsung, 80M won ($80K) per year, PI, 2012~2015
6. HoloDigilog Human Media Research Center, ERC, NRF, 50M won ($50K) per year, co-PI, 2011~2016
7. Small or gift funding from Samsung Heavy Industry and Adobe (USA), PI, 2012~

Pending:

Past support:

1. Development of Total VFX Simulation Techniques based on Lego-style modular design, MKE/KEIT, 2011~2014, 200M won ($200K) per year
2. A Semi-Realtime Renderer for High Quality CG Contents based on Multiple CPU/GPU MKE/KEIT, 200M won ($200K) per year, 2010~2012
3. Development of real-time physics simulation engine for e-entertainment, MKE/IITA, co-PI, 2008~2010, 370M won ($370K)
4. Efficient pattern mask generation for digital lithography, MKE, PI, 2009 ~ 2011, approximately 120M won ($120K)
5. Random-accessible compressed data and their applications, Korea Research Foundation (KRF), PI, 2008~2011, approximately 100M won ($100K)
6. Adaptive techniques for U-Learning, ETRI, MKE/IITA, PI, 2008~2010, 90M won ($90K)
7. Detecting forgery in 3D contents, co-PI, 2009 ~ 2010, MCST/KOCCA, 30M won ($25K)
8. Interactive Global Illumination of Massive eHeritage Data, Microsoft Research Asia, PI, $20K, 2009
9. Efficient Rendering, PI, 2009, ETRI, MKE/MCST/IITA, 30M won ($25K)
10. Fur Rendering, PI, 2009, ETRI, MCST/KEIT, 40M won ($30K)
11. Scalable Graphics/Geometric Algorithms, PI, 2007~2009, KAIST seed grant, 250M won ($250K)
12. Seed grant, 2007 ~ 2008, PI, LG, 19M won ($19K)
13. Cloth Simulation, 2007, co-PI, ETRI, 50M won ($50K)

Professional Activities

- Professional memberships
  - Korean Institute of Information Scientists and Engineers (KIISE, 한국정보과학회), Life-time member
  - IEEE & IEEE Computer Society: IEEE Senior member since Dec.-18, 2013
  - ACM and ACM SIGGRAH
  - Eurographics
  - Korea Computer Graphics Society (KCGS)
- Journal editorship
  - Associate editor, Graphical Models, 2015 ~ present
  - Associate editor, Journal of Computing Science and Engineering (JCSE), KIISE, 2015 ~ present
  - Associate editor, The Visual Computer, 2011 - present
  - Member of editorial board of Korea Computer Graphics Society, 2008 – present
- Conf. chair
  - ACM Symp. on Interactive 3D Graphics and Games, 2012 (conf. co-chair)
- Paper chair
  - ACM Symp. on Interactive 3D Graphics and Games, 2013 (paper co-chair)
- Award committee:
  - Significant new researcher award (우수신진상), KCGS, 2011 ~
- Program committee member:
  - ACM SIGGRAPH Asia: 09
  - ACM Solid and Physical Modeling Symposium: 07, 08
  - ACM Symp. on Interactive Graphics and Games: 14~16
  - ACM Symp. on Virtual Reality Software Technology: 14
  - ACM International Web 3D Conference: 14
  - Computational Visual Media Conference (CVM): 13
  - Eurographics: 12 (short papers)
  - (Korea) HCI: 08 ~ 16
  - High-Performance Graphics: 09, 10
  - IEEE/RSJ Int. Conf. on Intelligent Robots and Systems (IROS): 12
  - IEEE Pacific Visualization 12, 15~16
  - IEEE Symposium on Interactive Ray Tracing: 07
  - IEEE Visualization: 09, 10, 11
  - IEEE Virtual Reality: 11
  - IEEE Virtual Reality Workshop on Virtual Cityscapes: 08
  - Pacific Graphics: 09 ~ 15
  - Robotics Science and Systems (RSS): 14
  - Workshop on Massive Data Algorithmics (MASSIVE): 12
- Poster chair
  - ACM Interactive 3D Graphics and Games, 2011
- (Served as) Referee for:
  - ACM SIGGRAPH and SIGGRAPH Asia

- o ACM Solid and Physical Modeling Symposium
- o ACM Symposium of Interactive 3D Graphics
- o ACM Transactions on Graphics
- o Computer-Aided Design
- o Eurographics
- o Eurographics Symposium of Geometric Processing
- o Eurographics Symposium of Rendering
- o Graphics Hardware
- o Graphics Interface
- o IEEE Int. Conf. on Robotics and Automation (ICRA)
- o IEEE/RSJ Int. Conf. on Intelligent Robots and Systems (IROS)
- o IEEE Virtual Reality
- o IEEE Visualization
- o IEEE Transaction on Automation Science and Engineering
- o IEEE Transaction on Visualization and Graphics
- o IEEE Symposium on Interactive Ray Tracing
- o Information Processing & Management
- o International conf. on computer vision (ICCV)
- o Pacific Graphics
- o The Visual Graphics, etc.

Teaching

Note: I report teaching evaluations for some of courses; the perfect teaching evaluation score is 5 and (X/Y) indicates X ranked out of Y classes in terms of teaching evaluation score.

1. Image Retrieval (Taught in English)
   - Fall 2011 (4.72, 2/65)
2. Motion Planning and Applications (Taught in English)
   - F11 (4.67, 4/65), Fall 2009 (N/A)
3. Advanced Rendering (Taught in English)
   - F10 (4.44, 14/58), Fall 2008 (N/A)
4. Graduate-level Computer Graphics, CS580, Taught in English
   - S13 (4.3, 19/59)
5. Introduction to Computer Graphics, CS380 (previously CS480), (Taught in English)
   - S12 (4.4, 12/62), S11 (4.46, 9/56), S10 (4.54, 14/61), Spring 2009 (N/A), Spring 2008 (N/A)
6. Topics in Computer Graphics: Scalable Graphics/Geometric Algorithms (Taught in English)
   - Fall 2007 (N/A)

Graduate Students

Currently supervised

Ph.D. course
1. Pio Claudio
2. JungIn Lee

    3. Donghyuk Kim
    4. Soomin Kim
    5. Myung-Bae Son

M.S. course
    6. Woong-Jick Yoon (WST)
    7. Yongsun Kwon (Robotics Program)
    8. Hyun-chul Yang (Robotics Program)
    9. Taeyoung Kim
    10. Yoonseok Lee
    11. Byung Yoon Choi
    12. JaeHyung Cho
    13. MinCheol Kang (Robotcs Program)

Supervised in the past
    Ph.D. course
    1. JaePil Heo, 2015
    2. BooChang Moon, 2014
    3. DukSu Kim, 2014
    4. JungHwan Lee, 2014
    5. TaeJoon Kim, 2013

    M.S. course
    1. ChangMin Choi (WST), 2015
    2. Mingyang Sun, 2015
    3. Gayeon Lee, 2015
    4. Myungwhan Seo (CT), 2014
    5. Lin Loi, 2013
    6. Hyosub Park, 2013
    7. Youngwoon Lee, 2013
    8. OSung Kown, 2013
    9. JongYun Jeon, 2011
    10. KunHo Kim, 2011
    11. YongYoung Byun, 2010

    Postdoctorate
    1. Peng Du, 2015

Ph.D. Committees
Committee chair (my advisee)
1. Jaepil Heo (허재필), CS, KAIST, Nov. 2014
    - Compact Representation of High-Dimensional Data for Large-Scale Image Search
2. Bochang Moon (문보창), CS, KAIST, May, 2014
    - Acceleration techniques for Monte Carlo Ray Tracing
3. Duksu Kim (김덕수), CS, KAIST, May, 2014
    - Heterogeneous Parallel Computing for Proximity Queries
4. JungHwan Lee (이정환), CS, KAIST, May, 2014

- Sampling-based motion planning algorithm to handle a narrow passage problem
5. TaeJoon Kim (김태준), CS, KAIST, May, 2013
    - Interactive global illumination of non-deformable massive models

Committee member
6. DukMin Ham (함덕민), CS, KAIST, May, 2015
    - Efficient Filtering and Result Refinement for Large Scale Image Databases, MyungHo Kim (Advisor)
7. JuYoung Yeon (연주영), CS, KAIST, May, 2015
    - Geometric Matching Problems, Otfried Cheong (Advisor)
8. JaeIl Kim (김재일), CS, KAIST, Oct., 2014
    - A Template Model-based Shape Morphometry :focused on the Brain Subcortical and Ventricular Structures, JinAh Park (Advisor)
9. DongHun SaGong (사공동훈), CS, KAIST, May, 2014
    - A physics-based approach to generating mixing patterns for miscible liquids, SungYong Shin (Advisor)
10. DaSung Han (한다성), CS, KAIST, May, 2014
    - On-line Real-time Physics-based Motion Synthesis based on Low-dimensional Model Predictive Control and Motion Transformation, SungYong Shin (Advisor)
11. SangWook Yu (유상욱), CS, KAIST, May, 2013
    - Analysis of Education Effects on Cognitive Reserve based on Network Flow, SungYong Shin (Advisor)
12. TaeKwon Jang (장태권), CT, KAIST, Nov., 2012
    - Water simulations with multilevel vorticity and rich surface details, JunYong Noh (Advisor)
13. MK Hasan, CS, KAIST, Nov, 2012
    - Approximation algorithms for facility location and graph partitioning problems, Kyungyong Chwa (Advisor)
14. Hoeryong Jung (정회룡), ME, KAIST, May, 2012
    - Real-time cutting simulation of deformable objects using meshless method, DoYong Lee (Advisor)
15. YongJoon Lee (이용준), CS, KAIST, Apr, 2012
    - Efficient multi-resolution cloth simulation and automated fitting method of cloth model, SungHee Choi (Advisor)
16. ManMyung Kim (김만명), CS, Seoul National Univ., Dec., 2011
    1. Multiple character motion synthesis, JeHee Lee (Advisor)
17. YongJoon Kim (김용준), CS, Seoul National Univ., Dec., 2011
    - Geometric Computing, MyungSoo Kim (Advisor)
18. HongYoon Kim (김홍윤), EE, KAIST, Nov., 2011
    - A Mobile Stream Processor with Reconfigurabel SIMT Multi-Core for Ray Tracing, YiSeop Kim (Advisor)
19. YoungHo Seol (설영호), CT, KAIST, Nov., 2011
    - JunYong Noh (Advisor)
20. JaeWoo Seo (서재우), CT, KAIST, Oct., 2011
    - JunYong Noh (Advisor)
21. NaeJin Kong (공내진), CS, KAIST, Aug., 2011
    - Physically-based reflection separation using polarized images, SungYong Shin (Advisor)

22. MinJung Lee (이민정), CS, KAIST, Dec., 2010
    - Forensic tracking watermarking for digital cinema, HyeungKyu Lee (Advisor)
23. JungChon Ju (주정춘), CS, KAIST, Dec., 2010
    - Improved Steganographic Method Preserving the Pixel-Value Differencing Histogram for the Security and Practicality, HyeungKyu Lee (Advisor)
24. Nahyup Kang (강나협), CS, KAIST, May, 2010
    - A Hybrid Approach to Multiple Fluid Simulation using Volume Fractions, Sung Yong Shin (Advisor)
25. HyunWoo Jeong (정현우), CS, KAIST, Oct., 2009
    - Design and Analysis of LP-based Approximation Algorithms for Facility Location Problems, Kyung-Yong Chwa (Advisor)
26. DongHyuk Lim, CS, KAIST, Apr., 2009
    - Data Hiding Techniques for Digital Maps, Heung-Kyu Lee (Advisor)
27. KyuSik Jeong, EE, KAIST, Jan., 2009
    - Bandwidth-Efficient Mobile Geometry Processor with Tessellation Functionality and Power-Saving Techniques, YiSeop Kim (Advisor)

Committees in Dept. or Univ. levels

1. Student committee (chair), 3/15~
2. Graduate student admission committee (chair), 11/13 ~ 2/15
   We have made two major changes:
      1) Introduce a programming test for CS-oriented students
      2) Create a new admission category for non-CS oriented studnets
   I have made and implemented these changes with Prof. SeungRyoul Maeung, KeeEung Kim, GeeHyuk Lee, U Kang, and Insik Shin
3. Public relation committee, 07/13 ~ 2/15
   I supported our dept. to have an update-to-dated homepage. Fortunately, our dept. homepage positioned the top rank among IT-related depts.. at KAIST
4. Student committee, 01/10 ~ 02/13
5. Search committee for Dept. Chair, Sep. ~ Dec. 2011
6. Research infrastructure committee, 07/09 ~ 12/11
7. International collaboration committee, 03/08 ~ 12/09

Visitors to My Lab.

(I like to invite people to my lab and share research interest)

`16 ~ 14: Jia Pan, City University of Hong Kong, 11/15; Jyh-Ming Lien, George Mason Univ, 10/15; David Kasik, Boeing, 9/15; DongJun Shin (신동준), 09/15, KunJin Yoon (윤국진), GIST, 08/15, Myung Hyun (명현), KAIST, 08/15; YongJun Kim, Technion, 07/15; MyungGeol Choi (최명걸), Catholic Univ., 05/15; Frank Park (박종우), SNU, 04/15; WoonTak Wo (우운택), CT/KAIST, 01/15, John Keyser, Texas A&M Univ., 10/14; JongChang Kim (김종찬), Kokmin Univ, 07/14; WonJong Lee (이원종), SAIT, 02/14; Byungseok Shin (신병석), Inha Univ., 02/14; Zhe Lin, Adobe, 01/14

`13 ~ `11: WooChang Park (박우찬), SeJong Univ., 12/13; Peng Du, Zhejiang Univ., 08/13; TaeSoon Kwon (권태수), Hanyang Univ., 07/13; SungHyun Cho (조성현), Adobe, 07/13; Giltae

Song (송길태), Stanford Univ., 06/13; Miguel Otaduy, URJC Madrid, 04/13; Sungkil Lee (이성길), SungKyunKwan Univ., 4/13; Won-Ki Jeong (정원기), UNIST, 4/13; KyungMu Lee (이경무), SNU, 03/13; Bazin Jean-Charles, ETH Zurich, 11/12, JinWook Seo (서진욱), SNU, 10/12, JungHyun Han (한정현), Korea Univ., 5/12; Pierre-Yves Laffont, INRIA Sophia-Antipolis, 02/12; Sunghee Lee (이성희), GIST, 6/11;

`10 ~ `08: Rui Wang, UMass Amherst, 12/10; Toshiya Hachisuka, UCSD, 9/10, Jung-Mo Hong, DongGuk Univ, 09/10; Eon-Il Jang (장언일), Zerodin Games, 05/10; Ted Kim, University of Saskatchewan, Canada, 12/09; Steve Marschner, Cornell Univ., 10/09, Kyeong-Seok Ko (고형석), SNU, 09/09; Bongsoo Sohn (손봉수), ChungAng Univ., 06/09; JinWook Kim (김진욱), KIST, 01/09; JuHang Lee (이주행), ETRI, 11/08; Nelson Max, UC-Davis, 09/08, Dinesh Manocha, UNC-Chapel Hill, 09/08, SangIl Park (박상일), Sejong Univ., 04/08, JeHee Lee (이제희), SNU, 03/08