

# Curriculum Vitae

**Ku-Jin Kim**

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## GENERAL INFORMATION

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## EDUCATION

Ph.D. 1998.2 Computer Science & Engineering, POSTECH, Korea  
M.S. 1992.2 Computer Science, KAIST, Korea  
B.A. 1990.2 Computer Science, Ewha Womans University, Korea

## PROFESSIONAL EXPERIENCE

2004.3 – current Professor, School of Computer Science & Engineering, Kyungpook National University  
2003.9 – 2004.2 Assistant Professor, Graduate School for Information & Communication, Ajou University  
2002.8 – 2003.8 Visiting Assistant Professor, Dept. of Math. & Computer Science  
Univ. of Missouri-St. Louis, U.S.A.  
2000.9 – 2002.8 Assistant Professor, Graduate School for Information & Communication, Ajou University  
1998.12 – 2000.5 PostDoctoral Fellow, Dept. of Computer Sciences, Purdue University, U.S.A.  
1998.2 – 1998.12 PostDoctoral Fellow, Dept. of Computer Science, POSTECH

## RESEARCH INTERESTS

Computational Biology, Computer Graphics, GPGPU, Geometric Modeling

## PROFESSIONAL MEMBERSHIPS

2005.6 - Korea Information Processing Society  
2005.6 - Korea Multimedia Society  
2000.1 - Korea CAD/CAM Society  
2000.1 - Korea Computer Graphics Society

## COURSES TAUGHT

(at Kyungpook National University)  
STAT 45201 Numerical Analysis  
COMP41301 Computer Graphics  
COME34201 Data Structure & Algorithms II  
COMP31204 Operating Systems  
COME34501 C++/C# Programming  
COMP74702 Advanced Computer Graphics (Graduate Course)

(at Univ. of Missouri-St. Louis)

CS376	Operating Systems
CS278	Design and Analysis of Algorithms
CS361	Database Management Systems

## PROFESSIONAL SERVICE

2014 -	Korea Computer Graphics Society	Vice President
2006.11-	Computer Graphics International	Program Committee
2005.9 -	Human Computer Interface (Korea)	Program Committee

Referee for:

- Computer-Aided Design
- Computer Aided Geometric Design
- Computers and Graphics
- Pacific Graphics
- Computer Graphics International
- Geometric Modeling and Processing
- Human Computer Interface
- Journal of Computational and Applied Mathematics
- Samsung Humantech Paper Award

## PUBLICATIONS

### International Journal Papers

1. GaneshKumar Pugalendhi, Durgadevi Velusamy, Anand Paul, **Ku-Jin Kim**, "Fuzzy-based trusted routing to mitigate packet dropping attack between data aggregation points in smart grid communication network," *Computing*, Springer, vol. 99, no. 1, pp. 81-106, January 2017.
2. Yong-Hyun Jang, Jung-Keun Suh, **Ku-Jin Kim** and Yoo-Joo Choi, "Robust Target Model Update for Mean-shift Tracking with Background Weighted Histogram," *KSII Transactions on Internet and Information Systems*, Vol. 10, No. 3, March 31, 2016.
3. GaneshKumar Pugalendhi, Ammu Vijayakumar, **Ku-Jin Kim**, "A NEW DATA DRIVEN METHOD FOR MICROARRAY DATA CLASSIFICATION," *International Journal of Data Mining and Bioinformatics*, vol. 15, no. 2, May 2016, pp.101-124.
4. Byungjoo Kim, Jung Eun Lee, Young J. Kim, **Ku-Jin Kim**, "GPU Accelerated Finding of Channels and Tunnels for a Protein Molecule," *International Journal of Parallel Programming*, vol. 44, pp. 87-108, January 2016.
5. Sun-Mi Park, **Ku-Jin Kim**, "Color recognition with compact color features," *International Journal of Communication Systems*, vol 25, no. 6, pp.749-762, June 2012.
6. Yoo-Joo Choi, **Ku-Jin Kim**, We-Duke Cho, "Intelligent Pedestrian-Search System Based on Color Queries," *Special Issue of Information Journal*, vol.15, No.5, May, 2012, 2193-2206.
7. **Ku-Jin Kim**, "Circles in Torus-Torus Intersection," *Journal of Computational and Applied Mathematics*, vol. 236, no. 9, 2387-2397, March 2012.
8. Byungjoo Kim, **Ku-Jin Kim**, Joon-Kyung Seong, "GPU Accelerated Molecular Surface Computing," *Applied Mathematics & Information Sciences*, vol.6, no.1S, pp.185S-194S, January 2012.

9. Cheon-Hyeon Park, Gershon Elber, **Ku-Jin Kim**, Gye-young Kim, Joon-Kyung Seong, "A Hybrid Parallel Solver for Systems of Multivariate Polynomials using CPUs and GPUs," *Computer-Aided Design*, vol.43, no.11, 1360-1369, Nov. 2011.
10. Joon-Kyung Seong, Nakhoon Baek, **Ku-Jin Kim**, "Real-time approximation of molecular interaction interfaces Based on Hierarchical Space Decomposition," *Computer-Aided Design*, vol.43, no.12, 1598-1605, Dec. 2011.
11. Yoo-Joo Choi, Doo-Cheol Kang, We-Duke Cho, **Ku-Jin Kim**, "Smart Entrance Monitoring System Using Clothing Color Analysis in Multi-Camera Environment," *Special Issue: Ubiquitous Information Technology for Intelligent Applications in Information Journal* (special issue of CUTE 2010), vol. 14, no. 7, July, 2011, pp.2523-2535.
12. **Ku-Jin Kim**, Sun-Mi Park, Nakhoon Baek, "A Texture-Based Algorithm for Vehicle Area Segmentation Using the Support Vector Machine Method," RSFDGRC07, LNAI 4482, pp.542, 2007.
13. Kwanhee Lee, Joon-Kyung Seong, **Ku-Jin Kim**, Sung Je Hong, "Minimum Distance between Two Sphere-Swept Surfaces," *Computer-Aided Design*, Vol.39, No. 6, pp.452-459, June 2007.
14. Joon-Kyung Seong, **Ku-Jin Kim**, Myung-Soo Kim, Gershon Elber, "Perspective Silhouette of a General Swept Volume," *The Visual Computer*, Vol. 22, No. 2, pp. 109-116, 7 Feb. 2006.
15. Nakhoon Baek, **Ku-Jin Kim**, Manpyo Hong, "Vehicle Area Segmentation Using Grid-Based Feature Values," (Lecture Notes on Computer Science) *Computer Analysis of Images and Patterns* (ISSN:0302-9743), Vol. 3691, pp.464-471, Sep. 2005.
16. J.-K. Seong, **K.-J. Kim**, M.-S. Kim, G. Elber, R. R. Martin, "Intersecting a Freeform Surface with a General Swept Surface," *Computer-Aided Design* (ISSN: 0010-4485 Imprint: ELSEVIER), Vol.37, No.5, pp.473-483, April 2005.
17. **K.-J. Kim** and N.-H. Baek, "Fast extraction of polyhedral model silhouettes from moving viewpoint on curved trajectory," *Computers and Graphics* (ISSN: 0097-8493), Vol.29, No.3, pp.393-402, June 2005.
18. **K.-J. Kim**, "Minimum Distance between a Canal Surface and a Simple Surface," *Computer-Aided Design*, Vol.35, No.10, pp.871-879, September 2003.
19. **K.-J. Kim** and I.-K. Lee, "The Perspective Silhouette of a Canal Surface," *Computer Graphics Forum*, Vol. 22, No.1, pp.15-22, April 2003.
20. **K.-J. Kim**, E. Sacks, and L. Joskowicz, "Kinematic Analysis of Spatial Fixed-Axes Higher Pairs Using Configuration Spaces," *Computer-Aided Design*, Vol.35, No.3, pp.279-291, March 2003.
21. **K.-J. Kim** and I.-K. Lee, "Computing Isophotes of Surface of Revolution and Canal Surface", *Computer-Aided Design*, Vol.35, No.3, pp. 215-223, March 2003.
22. C. M. Hoffmann and **K.-J. Kim**, "Towards Valid Parametric CAD Models," *Computer-Aided Design*, vol.33, no.1, pp. 81-90, January 2001.
23. **K.-J. Kim**, M.-S. Kim, and K. Oh, "Torus/Sphere Intersection Based on a Configuration Space Approach," *Graphical Models and Image Processing*, vol. 60, no. 1, pp. 77-92, January 1998.

#### International Conference

1. Sanghun Jeong, **Ku-Jin Kim**, "Contact Curve Based Simulation of Side Chains from Two Amino Acids in a Protein Molecule," COMSIT, 29th Nov – 01 Dec, Krabi, Thailand, Dec. 2016.
2. GaneshKumar Pugalendhi, **Ku-Jin Kim**, "Hybrid Intelligent Methods for Microarray Data Analysis," The Proceedings of 15th IEEE International Conference on BioInformatics and BioEngineering (BIBE'15) , November 2-4, 2015, Belgrade, Serbia.
3. GaneshKumar Pugalendhi, **Ku-Jin Kim**, "Computational Support System for Personalized Medicine (poster),"

The Proceedings of the 6th ACM Conference on Bioinformatics, Computational Biology and Health Informatics (BCB'15), Pages 488-489, September 9-12, 2015, Atlanta, Georgia, USA.

4. GaneshKumar Pugalendhi, **Ku-Jin Kim**, "Intelligent F-information for genetic swarm algorithm based fuzzy expert system (poster)," The Proceedings of the 6th ACM Conference on Bioinformatics, Computational Biology and Health Informatics (BCB'15), Pages 474-475, September 9-12, 2015, Atlanta, Georgia, USA.
5. U Deok Seo, Yoo-Joo Choi, **Ku-Jin Kim**, "Updating Channel Adjacent Amino Acids for a Flexible Protein Molecule (poster)," The Proceedings of the 6th ACM Conference on Bioinformatics, Computational Biology and Health Informatics, Pages 472-473, September 9-12, 2015, Atlanta, Georgia, USA.
6. Yong-Hyun Jang, Jung-Keun Suh, **Ku-Jin Kim**, Yoo-Joo Choi, "Target model update of mean-shift tracking based on back-projection weights," The Proceedings of APIC-IST 2015, pp.43-44.
7. Byungjoo Kim, Jung Eun Lee, Young J. **Kim**, **Ku-Jin Kim**, "GPU Accelerated Finding of Channels and Tunnels for a Protein Molecule," 11th IFIP International Conference on Network and Parallel Computing , September 18-20, Yilan, Taiwan.
8. Yukyeong Kim, **Ku-Jin Kim**, "Computation of a Bounding Volume Hierarchy for a Flexible Amino Acid (poster)," Proceed. of the 2014 International Conference on Bioinformatics & Computational Biology, BIOCOMP'14, 24th July 2014 (poster).
9. U Deok Seo, **Ku-Jin Kim**, "Contour Generation for a Depth Image (poster)," Proceed. of the 2014 International Conference on Bioinformatics & Computational Biology, BIOCOMP'14, 24th July 2014.
10. Byungjoo Kim, **Ku-Jin Kim**, "Computing the convex hull for a set of spheres on a GPU (poster abstract)," Proceedings of VRCAI 2012, 12.2-4, Singapore, 2012, pp. 345.
11. Byungjoo Kim, **Ku-Jin Kim**, Ji-Hoon Choi, Nakhoon Baek, Joon-Kyung Seong, Yoo-Joo Choi, "Finding surface atoms of a protein molecule on a GPU (poster)," Proceedings of SIGGRAPH Asia, 2011.
12. Cheon-Hyeon Park, Gershon Elber, **Ku-Jin Kim**, Gye-young Kim, Joon-Kyung Seong, "A Hybrid Parallel Solver for Systems of Multivariate Polynomials using CPUs and GPUs," GD/SPM, 2011. (Best paper award)
13. **Ku-Jin Kim**, Jung-Eun Lee, Nakhoon Baek, "Voronoi diagram computation for protein molecules using graphics hardware (poster)," ACM SIGGRAPH, 2010.7.25.

## Thesis

1. **Ku-Jin Kim**, [\*Torus and Simple Surface Intersection Based on a Configuration Space Approach\*](#), Ph.D. Thesis, Dept. of Computer Science & Engineering, POSTECH, February, 1998.
  2. **Ku-Jin Kim**, *A Bottleneck Finding Algorithm and Its Applications (in Korean)*, M.S. Thesis, Dept. of Computer Science, KAIST, February, 1992.
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