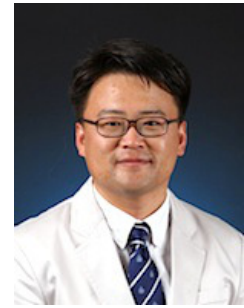


## Résumé

### Hee-Kap Ahn

Associate Professor  
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**married**, two sons.

### Research Interest

I am interested in most areas of computational geometry, the study of design and analysis of algorithms on geometry and optimization problems. Computational geometry has evolved from a sub-discipline of theoretical computer science, but it has developed in several directions and forged links with other application areas with interest in geometric computing, such as computer aided (geometric) design (CAD), computer aided manufacturing (CAM), robotics, computer graphics, virtual reality, computer vision, bioinformatics (computational biology) and geographic information systems (GIS).

Geometric problems that I have studied lately include fundamental problems from the area of *computer-aided design* (CAD) and *computer-aided manufacturing* (CAM), such as verification of manufacturability of a given CAD-model. Due to the geometric nature of manufacturing processes, this research tends to lead to interesting geometric questions.

Besides the work on manufacturing, I have been working on *approximation algorithms* for geometric optimization problems, that is, an interesting paradigm for the design of algorithms that returns near-optimal solutions efficiently. Most natural optimization problems, including those arising in important application areas, are NP-hard, therefore, their exact solution is prohibitively time consuming and research into approximability of these problems becomes a compelling subject in computer science. Approximation algorithms are often surprisingly simple yet practical and efficient.

I also have a keen interest in *shape matching*. Shape matching is an important ingredient in shape retrieval, recognition and classification, alignment and registration, and approximation and simplification. In a typically large database of shapes, for example, shape retrieval searches for all shapes similar to a query shape. Recently I have been working on the design of algorithms to compute the similarity between shapes, which lead to papers in journals and conferences including ACM Symposium on Computational Geometry.

### Educational Qualifications

**Ph.D.** in Computer Science with a topic in Theoretical Computer Science

December 2001 at Utrecht University in the Netherlands

Title of thesis : *Geometric Aspects of the Casting Process*

Dissertation committee : Professors Jan van Leeuwen(chair), Mark Overmars (advisor), Otfried Cheong

(co-advisor), Mark de Berg, Prosenjit Bose, Siu-Wing Cheng, Peter van Emde Boas, Doaitse Swierstra, Arno Siebes

**Master of Science** in Computer Science

February 1998 at Pohang University of Science & Technology (POSTECH) in Korea

Title of thesis : *Casting with two-part cast: Opposite and Non-opposite cast removal*

Dissertation committee : Professors Otfried Schwarzkopf (advisor), Mark de Berg, Myung-Soo Kim

**Bachelor of Engineering** in Computer Engineering

February 1996 at Kyungpook National University in Korea

**Awards**

- Best Paper Award at 11th International Symposium on Spatial and Temporal Databases (2009)
- Research Fellowship(AIO) from Utrecht University (2000-2001)
- Postgraduate Scholarships from Hong Kong University of Science & Technology (1997-2000) and Pohang University of Science & Technology (1996-1997)
- Scholarship for academic excellence from Kyungpook National University (1992-1995)

**Professional experience**

- Since September 2010, I have been associate professor at the Department of Computer Science & Engineering, POSTECH in Korea.
- Since September 2008, I have been an adjunct professor at the Department of Mathematics, POSTECH in Korea.
- From July 2007 to August 2010 I was assistant professor at the Department of Computer Science & Engineering, POSTECH in Korea.
- From March 2006 to July 2007, I was assistant professor at the Department of Computer Science & Engineering, Sejong University in Korea.
- From February 2004 to February 2006, I was research assistant professor at Computer Science Division, Korea Advanced Institute of Science & Technology in Korea, as a replacement of military service.
- From October 2001 to January 2004, I was scientific researcher at Imaging Media Research Center, Korea Institute of Science & Technology in Korea, as a replacement of military service.
- From September 2000 to December 2001, I was a graduate student (Ph.D. candidate) and Research Assistant ('AIO') at Institute of Information and Computing Sciences, Utrecht University in the Netherlands
- From September 1997 to August 2000, I was a graduate student (Ph.D. candidate) and Research/Teaching Assistant at Department of Computer Science, Hong Kong University of Science and Technology (HKUST) in Hong Kong
- From March 1996 to August 1997, I was a graduate student and Research/Teaching Assistant at Department of Computer Science, Pohang University of Science and Technology (POSTECH) in Korea

**Research visits.** I have visited research groups on Computational Geometry for periods of one to four weeks. So far, I have visited the following universities:

- King Abdullah University of Science & Tech.(KAUST), Saudi Arabia, on invitation by Dr. Antoine Vigneron (2011, 2012)

- Bayreuth University, Germany, on invitation by Dr. Christian Knauer (2010)
- Kyoto University, Japan, on invitation by Dr. Naoki Katoh (2010)
- Tohoku University, Japan, on invitation by Dr. Jinhee Chun and Dr. Takeshi Tokuyama (2009, 2010, 2012)
- Hong Kong University of Science and Technology (2005, 2007, 2008, 2010, 2011), on invitation by Prof. Dr. Siu-Wing Cheng
- Freie Universität Berlin (2004, 2006, 2009, 2010, 2012), on invitation by Dr. Christian Knauer
- Japan Advanced Institute of Science and Technology (2004), on invitation by Prof. Dr. Tetsuo Asano.
- Korea Advanced Institute of Science and Technology (2000, 2002), on invitation by Dr. Chan-Su Shin and Prof. Sung-Yong Shin
- Freie Universität Berlin (1999 and 2001), on invitation by Prof. Dr. Helmut Alt
- Carleton University (1999), on invitation by Prof. Dr. Prosenjit Bose
- Utrecht University (1998), on invitation by Dr. René van Oostrum

#### **Invitations to workshops and seminars.**

- Japan-Korea Joint Workshop on Optimized Extraction of Geometric Information, Yamagata, Japan (2012)
- Korean Workshop on Computational Geometry at Hokkaido, Japan (2011)
- Korean Workshop on Computational Geometry at Dagstuhl, Germany (2010)
- Invited Lectures at Winter School on Algorithms and Combinatorics (2010)
- Invited talk at Colloquium of Dept. Computer Science, Bayreuth Univ., Germany (2010)
- Dagstuhl Seminar on Geometric Networks, Germany (2009)
- Invited talk at Colloquium of Dept. Computer Science & Engineering, Chonbuk Univ. (2009)
- Talk at PMI Phylogenetic Combinatorics Seminar, POSTECH (2009)
- International Workshop on Discrete and Computational Geometry (2009)
- Talk at The 30th PNU-PMI Algebraic Combinatorics Seminar, PNU (2009)
- NICTA Workshop on Computational Geometry, Sydney, Australia (2008)
- Invited talk at Colloquium of Dept. Computer Science & Engineering, POSTECH (2006/2007)
- Dagstuhl Seminar on Geometric Networks and Metric Space Embeddings (2006) in Germany
- Workshop on Computational and Combinatorial Line Geometry (2006) in France(Ouessant Island)
- Invited talk at School of Computational Sciences, KIAS (2005)
- International Workshop on Discrete and Computational Geometry (2005) in Japan
- Colloquium of Dept. Computer Science & Engineering in POSTECH (2004)
- Dagstuhl Workshop on Computational Geometry and Geometric Networks (2004) in Germany
- Invited talk at Voronoi diagram Research Center in Hanyang University (2004)
- Invited talk at Dept. Computer Engineering in Kyungpook National University (2004)
- Korean Workshop on Computational Geometry (2002 – 2009)
- Dagstuhl Seminar on Computational Geometry (2001 and 2003) in Germany
- Utrecht Workshop on Computational Geometry (2000) in The Netherlands
- Workshop on Computational Geometry at HKUST (1997) in Hong Kong

**Languages** I am fluent in Korean (my first language) and English.

#### **Professional service**

**Board members.** I am currently a board member of Asian Association for Algorithms and Computation (AAAC)

**Journal editorship.** I am currently an editorial board member of

- Journal of Computational Geometry (JoCG) (2009–)
- Journal of Information Science and Engineering (JISE) (2011–)
- Journal of Information Processing (JIP) (2012–)

**Program committees.** I'm currently a PC member of

- AAAC 2012 (Asian Association for Algorithms and Computation)
- WALCOM 2012 (Workshop on Algorithms and Computation).

I was a PC member of

- COCOON 2011, (17th Annual International Computing and Combinatorics Conference)
- FAW-AAIM 2011, (Joint Meeting of 5th International Frontiers of Algorithmics Workshop and 7th International Conference on Algorithmic Aspects of Information and Management)
- CATS 2011 (17th Computing: the Australasian Theory Symposium)
- WALCOM 2011 (Workshop on Algorithms and Computation)
- SoCG 2010 (26th Annual Symposium on Computational Geometry)
- AAAC 2008–2010 (Asian Association for Algorithms and Computation)
- FAW 2009 (International Frontiers of Algorithmics Workshop)
- ISAAC 2006 (17th Annual International Symposium on Algorithms and Computation)
- AAIM 2006 / 2007 (Annual International Conference on Algorithmic Aspects in Information and Management)

SoCG is the only top conference in computational geometry, and ISAAC is one of the premier theoretical computer science conferences.

**Refereeing.** I have been a referee for several journals, mainly in the field of computational geometry, including

- Computational Geometry: Theory and Applications(CGTA),
- Algorithmica,
- Discrete Computational Geometry(DCG),
- International Journal of Computational Geometry and Applications(IJCGA),
- Journal of Discrete Algorithms(JDA),
- Computer Aided Geometric Design(CAGD),
- Computers & Graphics,
- Mathematics of Operations Research,
- International Journal on Foundations of Computer Science, and
- European Journal of Operational Research.
- Journal of Combinatorial Optimization (JoCO)
- GeoInformatika (GEIN)

I have also acted as a sub-referee for conferences, including

- ACM Symposium on Computational Geometry (SoCG),
- ACM-SIAM Symposium on Discrete Algorithms (SODA),
- European Symposium on Algorithms (ESA),
- International Symposium on Algorithms and Computation (ISAAC),
- International Computing and Combinatorics Conference (COCOON),
- IFIP International Conference on Theoretical Computer Science (IFIP TCS), and
- AAAC Annual Meeting (AAAC).

**Organization.** I was a member of the organizing committee of

- 23rd ACM Symposium on Computational Geometry (SoCG) 2007, Gyeongju, South Korea.
- 16th ACM Symposium on Computational Geometry (SoCG) 2000, Hong Kong.
- Korean workshop on computational geometry (KWCG). I started and organized an international workshop on Computational Geometry in Jeju island in August 2002, and in Seoul in August 2003 (together with Dr. Chan-Su Shin). Since then it became an annual event under this name. I organize it again in 2008 at POSTECH, with Otfried Cheong and Antoine Vigneron.
- Dagstuhl Workshop on Computational Geometry and Geometric Networks, Germany. 2004 (with Alexander Wolff, Christian Knauer, René van Oostrum and Chan-Su Shin.)

## Research projects

I am currently the research director of

- *Science Research Center (SRC-NRF)*. Surface Matching and Space Tessellations (2011/09/06 - 2018/08/31) - 1,000,000USD
- *National Research Foundation*. Adaptive Computational Geometry (2009/05/01 - 2013/04/30) - 150,000USD
- *National Research Foundation*. Algorithmic Aspects of Geometric Uncertainty (2010/05/01 - 2014/04/30) - 150,000USD
- *NRF/JSPS Korea-Japan binational Research Grant*. Finding objects in geometric data: Theoretical algorithms for geometric matching, segmentation and covering (2010/07/01 - 2012/06/30) - 24,000USD

I was the research director of

- *Hyundai Mobis Research Center*. Fast and Stable algorithms for path finding (2009/12/1 - 2010/11/31) - 50,000USD
- *Postech BSRI*. Geometric Shape Approximation and Matching (2008/5/1 - 2009/2/28) - 20,000USD
- *KRF/DAAD Korea-Germany Binational Research Grant*. - GEnKO : Korea-Germany Partnership Program Geometric Shape Approximation (2008/1/1 - 2010/12/31) - 26,000USD
- *Korea Research Foundation*. Geometric Shape Matching in 3D: Design of efficient matching algorithms under rigid motions (2007/8/1 - 2009/7/31) - 40,000USD
- *Postech BSRI*. Geometric Shape Matching (2007/9/1 - 2008/2/28) - 20,000USD
- *Korea Research Foundation*. Approximation algorithms for shape matching in 3 dimensional space (2006/7/1 - 2007/6/30) - 20,000USD

At *KAISTI* I was involved in

- *KOSEF - Korea France STAR grant*. Combinatorial Geometry of Lines in Space (2005/8/1 - 2007/7/31).
- *Korea Research Foundation*. Event-driven Online Crowd Simulation (2004/9/1 - 2006/2/28)
- *Korea Science & Engineering Foundation*. Design of Algorithms for Distributed Networks (2004/2/1 - 2006/2/28)

At *KISTI* I was involved in

- *MIC Research Grant*. 3D Cyber Museum Technology (2001/10/1 - 2003/2/28)
- *MOST Research Grant*. Evaluation of Car Prototypes using CAVE-like Systems (2001/12/1 - 2002/11/30) and Interactive Immersive Virtual Environment Technology (2002/1/1 - 2004/7/31)
- *MCT Research Grant*. Virtual Heritage Experience Platform (2002/12/1 - 2003/10/31)
- *KIST Research Grant*. Responsive Cyber Space Technology (2002/1/1 - 2003/12/31)

At *HKUST* I was involved in

- *DAAD/RGC Germany/Hong Kong Joint Research Scheme*. Geometric shape matching and Chinese character recognition (1999/4/1 - 2000/3/31).
- *RGC Competitive Earmarked Research Grant*. Efficient Algorithms for Measuring the Similarity of Graph Drawings (1999/9/1 - 2001/8/31), Feasibility of randomized geometric algorithms (1998/8/1 - 2001/7/31)

At *POSTECH* I was involved in

- *POSCO fund grant*. A Geometric Basis for Manufacturing (1996/5/1 - 1997/4/30).
- *KME Korean/US Joint Research Grant*. Algorithms for Industrial Part Handling and Manufacturing (1996/8/1 - 1997/7/31)

## Teaching experience

At *POSTECH* I have taught

- *Discrete and Computational Geometry* – EECE508 (2011)
- *Randomized Algorithms* – EECE701D (2011)
- *Algorithms* – CSED331 (2010/2011)
- *Approximation Algorithms* – EECE701C (2010)
- *Discrete Geometry* – EECE701B (2009)
- *Computational Geometry* – EECE701A (2008)
- *Research Project A/II* – CSED499 (2008)
- *Algorithm Design and Analysis* – CSED431 (2007/2008/2009)

At *Sejong Univ.* I taught

- *Data Structures* (2007)
- *Advanced Algorithms* (graduate course, 2006)
- *Algorithms* (2006)
- *Discrete Mathematics* (2006)
- *C Programming* (2006/2007)
- *Programming Languages* (2006)

At *HKUST* I was a teaching assistant of the following courses.

- *Introduction to Object-Oriented Programming* – COMP151 (1999/2000)
- *Computational Geometry* – COMP573 (1998)
- *Design and Analysis of Algorithms* – COMP271 (1998)

At *POSTECH* I was a teaching assistant of the following courses.

- *Programming Practice* – COMP231 (1997)
- *Computational Geometry* – COMP632 (1997)
- *Data Structures and Algorithms* – COMP233 (1996)
- *Algorithm Analysis* – COMP531 (1996)

## International Journal articles

26. Hee-Kap Ahn, Christian Knauer, Marc Scherfenberg, Lena Schlipf, Antoine Vigneron.  
Computing the Discrete Fréchet Distance with Imprecise Input.  
*To appear in International Journal of Computational Geometry and Applications* (on invitation, ISAAC 2010)
25. Hee-Kap Ahn, Siu-Wing Cheng, Iris Reinbacher.  
Maximum Overlap of Convex Polytopes under Translation.  
*To appear in the special issue on “Geometric Optimization” of Computational Geometry: Theory and Applications*
24. Hee-Kap Ahn, Otfried Cheong.  
Aligning two convex figures to minimize area or perimeter.  
*Algorithmica*, 62(1–2), pages 464–479, 2012.
23. Hee-Kap Ahn, Otfried Cheong, Jiri Matousek, Antoine Vigneron.  
Reachability by paths of bounded curvature in a convex polygon.  
*Computational Geometry: Theory and Applications*, 45(1–2), pages 21–32, 2012.  
arXiv:1008.4244
22. Hee-Kap Ahn, Sang Won Bae, Marc van Kreveld, Iris Reinbacher, Bettina Speckmann.  
Empty Pseudo-Triangles in Point Sets.  
*Discrete Applied Mathematics*, 159(18), pages 2205–2213, 2011.
21. Mu-Woong Lee, Wanbin Son, Hee-Kap Ahn, Seung-won Hwang.  
Spatial Skyline Queries: An Efficient Geometric Algorithm.  
*GeoInformatica*, 15(4), pages 665–697, 2011. (on invitation, SSTD 2009 Best Paper)
20. Sang-Sub Kim, Sang Won Bae, Hee-Kap Ahn.  
Covering a Point Set by Two Disjoint Rectangles.  
*International Journal of Computational Geometry and Applications*, 21(3), pages 313–330, 2011.  
(on invitation, ISAAC 2008)
19. Hee-Kap Ahn, Sang Won Bae, Erik D. Demaine, Martin L. Demaine, Sang-Sub Kim, Mathias Korman, Iris Reinbacher, Wanbin Son.  
Covering Points by Disjoint Boxes with Outliers.  
*Computational Geometry: Theory and Applications*, 44(3), pages 178–190, 2011.
18. Hee-Kap Ahn, Yoshio Okamoto.  
Adaptive Algorithms for Planar Convex Hull Problems.  
*IEICE Transactions on Information and Systems* E94–D(2), pages 182–189, 2011.
17. Hee-Kap Ahn, Peter Brass, Christian Knauer, Hyeon-Suk Na, Chan-Su Shin.  
Covering a Simple Polygon by Monotone Directions.  
*Computational Geometry: Theory and Applications* 43(5), pages 514–523, 2010.
16. Hee-Kap Ahn, Mohammad Farshi, Christian Knauer, Michiel Smid, Yajun Wang.  
Dilation-Optimal Edge Deletion in Polygonal Cycles.  
*International Journal of Computational Geometry and Applications*, 20(1), pages 69–87, 2010.  
(on invitation, ISAAC 2007)

15. Sang Won Bae, Chunseok Lee, Hee-Kap Ahn, Sunghee Choi, Kyung-Yong Chwa.  
Computing Minimum-Area Rectilinear Convex Hull and L-Shape.  
*Computational Geometry: Theory and Applications*, 42(9), pages 903–912, 2009.
14. Hee-Kap Ahn, Sang Won Bae, Siu-Wing Cheng, Kyung-Yong Chwa.  
Casting an Object with a Core.  
*Algorithmica* 54(1), pages 72–88, 2009
13. Hee-Kap Ahn, Helmut Alt, Tetsuo Asano, Sang Won Bae, Peter Brass, Otfried Cheong, Christian Knauer, Hyeon-Suk Na, Chan-Su Shin, Alexander Wolff.  
Constructing Optimal Highways.  
*International Journal of Foundations of Computer Science* 20(1), pages 3–23, 2009 (on invitation, CATS 2007)
12. Hee-Kap Ahn, Peter Brass, Hyeon-Suk Na, Chan-Su Shin.  
On the Minimum Size of Systems of Building Blocks Expressing all Intervals, and Range-Restricted Queries.  
*Computational Geometry: Theory and Applications* 42(3), pages 207–213, 2009
11. Hee-Kap Ahn, Sang Won Bae, Otfried Cheong, Joachim Gudmundsson.  
Aperture-Angle and Hausdorff-Approximation of Convex Figures.  
*Discrete & Computational Geometry* 40(3), pages 414–429, 2008
10. Hee-Kap Ahn, Peter Brass, Chan-Su Shin.  
Maximum Overlap and Minimum Convex Hull of Two Convex Polyhedra under Translations.  
*Computational Geometry: Theory and Applications* 40, pages 171–177, 2008
9. Hee-Kap Ahn, Otfried Cheong, Chong-Dae Park, Chan-Su Shin, Antoine Vigneron.  
Maximizing the Overlap of Two Planar Convex Sets under Rigid Motions.  
*Computational Geometry: Theory and Applications* 37, pages 3–15, 2007 (on invitation, ACM SoCG 2005)
8. Hee-Kap Ahn, Siu-Wing Cheng, Otfried Cheong.  
Casting with Skewed Ejection Direction.  
*Algorithmica* 44(4), pages 325–342, 2006
7. Hee-Kap Ahn, Peter Brass, Otfried Cheong, Hyeon-Suk Na, Chan-Su Shin, Antoine Vigneron.  
Inscribing an Axially Symmetric Polygon and other Approximation Algorithms for Planar Convex Sets.  
*Computational Geometry: Theory and Applications* 33(3), pages 152–164, 2006
6. Hee-Kap Ahn, Siu-Wing Cheng, Otfried Cheong, Jack Snoeyink.  
The Reflex-Free Hull.  
*International Journal of Computational Geometry and Applications* 14(6), pages 453–474, 2004
5. Hee-Kap Ahn, Siu-Wing Cheng, Otfried Cheong, Mordecai Golin, René van Oostrum.  
Competitive Facility Location: The Voronoi Game.  
*Theoretical Computer Science* 310(1-3), pages 457–467, 2004
4. Hee-Kap Ahn, Otfried Cheong, René van Oostrum.  
Casting a Polyhedron with Directional Uncertainty.  
*Computational Geometry: Theory and Applications* 26(2), pages 129–141, 2003

3. Hee-Kap Ahn, Otfried Cheong, Chan-Su Shin.  
Building Bridges between Convex Regions.  
*Computational Geometry: Theory and Applications* 25(1/2), pages 161–170, 2003
2. Hee-Kap Ahn, Mark de Berg, Prosenjit Bose, Siu-Wing Cheng, Dan Halperin, Jiri Matousek, Otfried Schwarzkopf.  
Separating an Object from its Cast.  
*Computer-Aided Design (CAD)* 34(8), pages 547–559, 2002
1. Hee-Kap Ahn, P. Bose, J. Czyzowicz, N. Hanusse, E. Kranakis, P. Morin.  
Flipping your Lid.  
*Geoinformatics X(2)*, pages 57–63, 2000

### Refereed International Conference Proceedings

34. Hee-Kap Ahn, Sang Won Bae, Otfried Cheong, Joachim Gudmundsson, Takeshi Tokuyama.  
A Generalization of the Convex Kakeya Problem.  
*Accepted for presentation at 10th Latin American Theoretical Information Symposium (LATIN 2012)*
33. Yoonho Hwang, Hee-Kap Ahn.  
Convergent Bounds on the Euclidean Distance.  
*In Proc. 25th Annual Conference on Neural Information Processing Systems (NIPS 2011)*
32. Hee-Kap Ahn, Sang-Sub Kim, Christian Knauer, Lena Schlipf, Chan-Su Shin, Antoine Vigneron.  
Covering and Piercing Disks with Two Centers.  
*In Proc. 22nd International Symposium on Algorithms and Computation (ISAAC 2011)*, pages 50–59, 2011.
31. Hee-Kap Ahn, Sang Won Bae, Christian Knauer, Mira Lee, Chan-Su Shin, Antoine Vigneron.  
Generating Realistic Roofs over a Rectilinear Polygon.  
*In Proc. 22nd International Symposium on Algorithms and Computation (ISAAC 2011)*, pages 60–69, 2011.
30. Wanbin Son, Seung-won Hwang, Hee-Kap Ahn.  
MSSQ: Manhattan Spatial Skyline Queries., pages 313–329, 2011.  
*In Proc. 12th Symposium on Spatial and Temporal Databases (SSTD 2011)*
29. Hee-Kap Ahn, Christian Knauer, Marc Scherfenberg, Lena Schlipf, Antoine Vigneron.  
Computing the Discrete Fréchet Distance with Imprecise Input.  
*In Proc. 21st International Symposium on Algorithms and Computation (ISAAC 2010)*, LNCS 6507, pages 422–433, 2010.
28. Hee-Kap Ahn, Siu-Wing Cheng, Iris Reinbacher.  
Maximum Overlap of Convex Polytopes under Translation.  
*In Proc. 21st International Symposium on Algorithms and Computation (ISAAC 2010)*, LNCS 6507, pages 97–108, 2010.
27. Hee-Kap Ahn, Yoshio Okamoto.  
Adaptive Algorithms for Planar Convex Hull Problems.  
*In Proc. 4th International Frontiers of Algorithms Workshop (FAW 2010)*, LNCS 6213, pages 316–326, 2010.

26. Wanbin Son, Mu-Woong Lee, Hee-Kap Ahn, Seung-won Hwang.  
Spatial Skyline Queries: An Efficient Geometric Algorithm. (Best Paper Award)  
In Proc. *11th International Symposium on Spatial and Temporal Databases (SSTD 2009)*, LNCS 5644, pages 247–264, 2009.
25. Hee-Kap Ahn, Sang Won Bae, Sang-Sub Kim, Matias Korman, Iris Reinbacher, Wanbin Son.  
Square and Rectangle Covering with Outliers.  
In Proc. *3rd International Frontiers of Algorithms Workshop (FAW 2009)*., LNCS 5598, pages 132–140, 2009.  
A shorter version has been presented at 25th European Workshop on Computational Geometry 2009.
24. Hee-Kap Ahn, Sang Won Bae, Iris Reinbacher.  
Optimal Empty Pseudo-Triangles in a Point Set.  
In Proc. *21st Canadian Conference on Computational Geometry (CCCG 2009)*, 2009.
23. Hee-Kap Ahn, Sang Won Bae.  
Covering a Point Set by Two Disjoint Rectangles.  
In Proc. *19th Annual International Symposium on Algorithms and Computation (ISAAC 2008)*, LNCS 5369, pages 728–739, 2008
22. Hee-Kap Ahn, Peter Brass, Christian Knauer, Hyeon-Suk Na, Chan-Su Shin.  
Covering a Simple Polygon by Monotone Directions.  
In Proc. *19th Annual International Symposium on Algorithms and Computation (ISAAC 2008)*, LNCS 5369, pages 668–679, 2008
21. Hee-Kap Ahn, Mohammad Farshi, Christian Knauer, Michiel Smid, Yajun Wang.  
Dilation-optimal edge deletion in polygonal cycles.  
In Proc. *18th Annual International Symposium on Algorithms and Computation (ISAAC 2007)*, LNCS 4835, pages 88-99, 2007
20. Sang Won Bae, Chunseok Lee, Hee-Kap Ahn, Sunghee Choi, Kyung-Yong Chwa.  
Maintaining Extremal Points and Its Applications to Deciding Optimal Orientations.  
In Proc. *18th Annual International Symposium on Algorithms and Computation (ISAAC 2007)*, LNCS 4835, pages 788-799, 2007
19. Hee-Kap Ahn, Sang Won Bae, Otfried Cheong, Joachim Gudmundsson.  
Aperture-Angle and Hausdorff-Approximation of Convex Figures.  
In Proc. *23rd Annual ACM Symposium on Computational Geometry (SoCG 2007)*, pages 37–45, 2007
18. Hee-Kap Ahn, Helmut Alt, Tetsuo Asano, Sang Won Bae, Peter Brass, Otfried Cheong, Christian Knauer, Hyeon-Suk Na, Chan-Su Shin, Alexander Wolff.  
Constructing Optimal Highways.  
In Proc. *Computing: The Australasian Theory Symposium (CATS 2007)*, CRPIT Vol.65, pages 7–14, 2007
17. Hee-Kap Ahn, Sang Won Bae, Siu-Wing Cheng, Kyung-Yong Chwa.  
Casting an Object with a Core.  
In Proc. *16th Annual International Symposium on Algorithms and Computation (ISAAC 2005)*, LNCS 3827, pages 882-891, 2005

16. Hee-Kap Ahn, Otfried Cheong.  
Stacking and Bundling two Convex Polygons.  
In Proc. *16th Annual International Symposium on Algorithms and Computation (ISAAC 2005)*, LNCS 3827, pages 40–49, 2005
15. Hee-Kap Ahn, Otfried Cheong, Chong-Dae Park, Chan-Su Shin, Antoine Vigneron.  
Maximizing the Overlap of Two Planar Convex Sets under Rigid Motions.  
In Proc. *21st Annu. ACM Symposium on Computational Geometry (SoCG 2005)*, pages 356–363, 2005
14. Hee-Kap Ahn, Peter Brass, Otfried Cheong, Hyeon-Suk Na, Chan-Su Shin, Antoine Vigneron.  
Approximation algorithms for Inscribing or Circumscribing an Axially Symmetric Polygon to a Convex Polygon.  
In Proc. *10th Annual International Computing and Combinatorics Conference (COCOON 2004)* LNCS 3106, pages 259–267, 2004
13. Hyun-Jhin Lee, Jinwook Kim, Hee-Kap Ahn, Sang Chul Ahn, Ik Jae Kim, Hyoung-Gon Kim, Heedong Ko.  
VR Experience Design in Tangible Space : Heritage Alive!  
In Proc. *15th Triennial Congress of International Ergonomics Association (IEA 2003) and 7th Joint Conference of the Ergonomics Society of Korea and the Japan Ergonomics Society*, 2003
12. Jinwook Kim, Hee-Kap Ahn, Heedong Ko.  
Description and Response Generation of Cyberspace.  
In Proc. *Proc. 15th Triennial Congress of International Ergonomics Association (IEA 2003) and 7th Joint Conference of the Ergonomics Society of Korea and the Japan Ergonomics Society*, 2003
11. ChangHoon Park, HeeDong Ko, Changseok Cho, Hee-Kap Ahn, Yo-Sub Han, TaiYun Kim.  
NAVER: Design and Implementation of Networked Virtual Environments Based on PC Cluster.  
In Proc. *6th Joint Conference of the Ergonomics Society of Korea and the Japan Ergonomics Society*, pages 221–228, 2002
10. Jaeho Chang, Heedong Ko, Heekap Ahn, Changhoon Park.  
NAVER Musical Composition Environment.  
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