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Heesung SHIN

Curriculum Vitae

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Assistant Professor

Department of Mathematics,
Inha University,
253 Yonghyun-dong, Nam-gu,
Incheon, 402-751, South KOREA

Personal Information

Date of birth	October 2, 1977
Sex	Male
Place of birth	Incheon, Republic of Korea
Nationality	Republic of Korea (South)

Research Interests

Combinatorics	Bijections between Permutations, Trees, and Tableaux. Combinatorial Algorithm.
q -series and special functions	Combinatorial aspects of orthogonal polynomials.

Positions

Mar. 2011 – present	Assistant Professor , <i>Department of Mathematics, Inha University, Incheon, Korea.</i>
Oct. 2010 – Feb. 2011	Research Assistant Professor , <i>Department of Mathematics, POSTECH, Pohang, Korea.</i> supported by <i>Brain Korea 21</i> , Korea
Oct. 2008 – Sep. 2010	Postdoctoral Researcher , <i>Institut Camille Jordan, Université Lyon 1, Lyon, France.</i> supported by <i>Centre National de la Recherche Scientifique</i> , France
Sep. 2007 – Sep. 2008	Postdoctoral Researcher , <i>Institut Camille Jordan, Université Lyon 1, Lyon, France.</i> supported by <i>Korea Research Foundation</i> , Korea

Education

Mar. 2001 – Aug. 2007 **Philosophiæ Doctor (Ph.D.)**, *Department of Mathematical Sciences, KAIST, Daejeon, Korea.*

Doctoral Thesis

title *A refinement of numbers for trees and parking functions*
supervisors Prof. Dongsu Kim

Sep. 1999 – Feb. 2001 **Master of Science**, *Department of Mathematics (Division of Mathematics), KAIST, Daejeon, Korea.*
(3 Semesters)

Mar. 1996 – Aug. 1999 **Bachelor of Science**, *Department of Mathematics, KAIST, Daejeon, Korea.*
(7 Semesters)

Mar. 1993 – Feb. 1996 **Diploma**, *Incheon Daegun High School, Incheon, Korea.*

Publications

- *Bijections for Entringer families*, *European Journal of Combinatorics*, 32 (1), 100–115, 2011.
with Yoann Gelineau and Jiang Zeng
- *A bijective enumeration of labeled trees with given indegree sequence*, *Journal of Combinatorial Theory, Series A*, 118(1), 115–128, 2011.
with Jiang Zeng
- *The q -tangent and q -secant numbers via continued fractions*, *European Journal of Combinatorics*, 31(7), 1689–1705, 2010.
with Jiang Zeng **MR2673011**
- *An involution for symmetry of hook length and part length of partitions*, *Discrete Mathematics*, 310, 1633–1639, 2010.
with Jiang Zeng **MR2601273**
- *A generalized enumeration of labeled trees and reverse prüfer algorithm*, *Journal of Combinatorial Theory, Series A*, 114(7), 1357–1361, 2007.
with Seunghyun Seo **MR2353128 (2008j:05173)**
- *Colored Prüfer codes for k -edge colored trees*, *Electronic Journal of Combinatorics* 11(1), N10, 7 pp. (electronic), 2004.
with Manwon Cho, Dongsu Kim, and Seunghyun Seo **MR2097341**

Conference Proceedings

- 20–24 July 2009 *A further correspondence between (bc, \bar{b}) -parking functions and (bc, \bar{b}) -forests*, *DMTCS Proceedings AK*, 793–804, 2009.
with Jiang Zeng
- 8–12 July 2002 *Two involutions on vertices of ordered trees*, *FPSAC 2002*.
with Seunghyun Seo

Preprints

- *The symmetric and unimodal expansion of Eulerian polynomials via continued fractions*, submitted, 2010.
with Jiang Zeng **arXiv:1005.4583**
- *On a decomposition of simple polytopes*, in preparation, 2010.
with Suyoung Choi
- *A refined bijection between alternating permutations and 0-1-2 increasing trees*, preprint, 2010. **arXiv:1003.4564**
- *A new bijection between forests and parking functions*, submitted, 2008. **arXiv:0810.0427**

Talks

- 9 Mar. 2011 *Trees and parking functions*, Math Colloquium, Inha University, Incheon, Korea.
- 25 Jan. 2011 *Bijections for Entringer families*, 9th Japan-Korea Workshop on Algebra and Combinatorics, Tohoku University, Sendai, Japan.
- 19 Nov. 2010 *On q -enumeration of permutations*, KAIST Discrete Math Seminar, KAIST, Daejeon, Korea.
- 6 Nov. 2010 *Certain expansion of Eulerian polynomials via continued fractions*, 41st Algebraic Combinatorics Seminar, POSTECH, Pohang, Korea.
- 22 Oct. 2010 *On a generalization of Eulerian polynomials via continued fractions*, 2010 Global KMS International Conference, POSTECH, Pohang, Korea.
- 27–30 Sep. 2009 *Symmetry and super-symmetry distribution for partitions*, Séminaire Lotharingien de Combinatoire 63, Centro Residenziale Universitario di Bertinoro, Bertinoro, Italy.
- 20–21 Aug. 2009 *Symmetry and super-symmetry distribution for partitions*, 2009 Combinatorics Workshop, KAIST, Daejeon, Korea.
- 20–24 Jul. 2009 *A further correspondence between (bc, \bar{b}) -parking functions and (bc, \bar{b}) -forests*, FPSAC09, Hagenberg, Austria.
Poster
- 15–16 Jun. 2009 *Counting labelled trees with given indegree sequence*, Journées du GDR Informatique Mathématique, Lyon, France.
- 21–24 Sep. 2008 *Forests and parking functions*, Séminaire Lotharingien de Combinatoire 61, Grande Hotel da Curia, Curia, Portugal.
- 21 Aug. 2008 *Counting labelled trees with given indegree sequence*, KAIST Discrete Math Seminar, KAIST, Daejeon, Korea.
- 27 Nov. 2007 *On a decomposition of simple polytopes*, Séminaire de Théorie des Nombres et Combinatoire, ICJ, Lyon, France.
- 6–8 Aug. 2007 *On a decomposition of simple polytopes*, 2007 Combinatorics Workshop, KAIST, Daejeon, Korea.

- 10 Aug. 2006 *The bijection between forests and parking functions*, 2006 Combinatorics Workshop, Yeoungnam University, Gyeongsan, Korea.
- 2 Aug. 2006 *The similarity of forests and parking functions*, 2006 Lectures, Center for Combinatorics, Nankai University, Tianjin, China.
- 10 Jun. 2006 *Forests and parking functions*, 13th Algebraic Combinatorics Seminar, Pusan National University, Pusan, Korea.
- 8–10 Aug. 2005 *Combinatorial objects for q -exponential functions*, 2005 Combinatorial Mathematics Conference, Yonsei University, Seoul, Korea.
- 27 Apr. 2002 *Permutation patterns, ordered trees and continued fractions*, 2002 Spring KMS Conference, Hoseo University, Cheonan, Korea.

Honor and Awards

- Aug. 1999 Graduation magna cum laude, KAIST
- Nov. 1998 **Second Place**, 1998 National Undergraduate Mathematics Competition, The Korean Mathematics Society.
- Fall 1998 Top GPA Scholarship, KAIST
- Nov. 1997 **Third Place**, 1997 National Undergraduate Mathematics Competition, The Korean Mathematics Society.
- Mar. 1996 – Aug. 1999 Merit-based Scholarship, KAIST
- Mar. 1996 – Feb. 2005 Government Fellowship (tuition waive), Korea

Experience

- Sep. 2004 – June 2007 **Head Teaching Assistants**, KAIST, Daejeon, Korea.
managing various courses with max. 700 students for each semester
- Sep. 1999 – June 2004 **Teaching Assistant**, KAIST, Daejeon, Korea.
various courses
- Jan. of 1997 – 1998 **Teaching Assistant**, Korea Mathematical Olympiad Winter School, The Korean Mathematics Society, Daejeon, Korea.
- Aug. of 1996 – 1997 **Teaching Assistant**, Korea Mathematical Olympiad Summer School, The Korean Mathematics Society, Daejeon, Korea.

Computer Skills

- mathematical tool **Maple** *proficient in computing and conjecturing*
- typography **L^AT_EX** *skillful*
- license **Engineer Information Processing**, Human Resources Development Service of Korea, Korea, 2001.
- courses I have completed various courses - **Algorithm, Automata, Computational Theory, Logic Theory, Information Theory, Machine Learning, Artificial Intelligence, etc.** - of Computer Science in KAIST.

Other Activities

- 13 Apr. 2001 – 14 Nov. 2006 **Technical Research Personnel**, KAIST, Daejeon, Korea.
for Military Service
- Jan. 2000 – Feb. 2002 **Server Administrator**, *Department of Mathematics, KAIST*, Daejeon, Korea.
for web-server, computing server, etc.
- Mar. – Aug. 1997 **Editor-in-chief**, *monthly magazine MATH LETTER*, KAIST Mathematical Problem Solving Group.

References

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Seunghyun Seo, shyunseo@gmail.com, +82-33-250-6721