CURRICULUM VITAE

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- **Personal Information:**
  - Birth place : Kong-ju, Chung-Chong Nam-Do, Korea
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- **Education:**
  - 1987-1992 : Seoul National University, B.S. in Mathematics
  - 1992-1994 : Seoul National University, M.S. in Mathematics
  - 1994-1999 : Seoul National University, Ph.D. in Mathematics
    Title of thesis : On universal forms
    Thesis Advisor : Prof. Myung-Hwan Kim
  - 1999-2001 : Research Fellow at Korea Institute for Advanced Study(KIAS)
  - 2001-2002 : Visiting Research Scholar at the Ohio-State University
  - 2002-2002 : Visiting Research Scholar at Korea Institute for Advanced Study(KIAS)
  - 2002-2003 : Research Fellow at Korea Institute for Advanced Study(KIAS)
  - 2003-2009.02 : Assistant and Associate Professor at Sejong University
  - 2009.03-present : Associate Professor at Seoul National University

- **Research Interests:**
  - Representations of Integral Quadratic Forms
  - Sphere Packings and Algebraic Coding Theory
  - Combinatorial Design Theory

- **Awards:**
  - 2008.4 : KMS Excellent Research Paper Award
  - 2008.6 : Scientists of the Month (Korea Science and Engineering Foundation)

- **Publications:**

(1) (with M.-H. Kim) A Lower bound for the number of squares whose sum represents integral quadratic forms, *J. Kor. Math. Soc.* 33(1996), 651-655.

(2) (with M.-H. Kim) Representation of positive definite senary integral quadratic forms by a sum of squares, *J. Number Theory* 63(1997), 89-100.

(3) (with Ssang-Soo Lee and Seung-Woo Seo) On the construction of multiwavelength optical orthogonal codes, *Korea Communication Soc.* 24(1999), 869-877

(4) (with B.M. Kim and M.-H. Kim) 2-universal positive definite integral quinary quadratic forms, *Contemp. Math.* 249(1999), 51-62.

(5) Universal $\mathbb{Z}$-lattices of minimal rank, *Proc. Amer. Math. Soc.* No.2 128(2000), 683-689.

(6) (with M.-H. Kim) Generation of isometries of $\mathbb{Z}$-lattices by symmetries, *J. Number Theory* 83(2000), 76-90.

(7) Representations of binary forms by quinary quadratic forms, *Trends in Math.* 3(2000), 102-107.

(8) (with M.-H. Kim and J.-K. Koo) On representations of binary forms by certain positive quinary quadratic forms, *J. Number Theory* 89(2001), 97-113.

(9) (with M.-H. Kim) A local-global principle for representations of binary forms by certain quinary forms, *J. Kor. Math. Soc.* 39(2002), 525-542.

(10) (with M.-H. Kim) Bounds for quadratic Waring's problem, *Acta. Arith.* 104(2002), 155-164.

(11) (with W. K. Chan) Finiteness theorems for positive definite n-regular quadratic forms, *Trans. Amer. Math. Soc.* 355(2003), 2385-2396.

(12) Representations of quadratic forms by almost universal forms, *Math. Z.* 244(2003), 399-413.

(13) (with W. K. Chan) Positive ternary quadratic forms with finitely many exceptions, *Proc. Amer. Math. Soc.* 132 (2004), 1567–1573.

(14) (with W. K. Chan, A. Earnest) Regularity properties of positive definite integral quadratic forms, *Contemp. Math.* 344(2004), 59–71.

(15) (with M.-H. Kim) Representations of integral quadratic forms by sums of squares, *Math. Z.* 250(2005), 427-442.

(16) (with B. M. Kim, M.-H. Kim) Finiteness theorem for representability of quadratic forms by forms, *J. Reine Angew. Math.* 581(2005), 23–30.

(17) (with Jangheon Oh and Hoseog Yu) New infinite families of 3-designs from algebraic curves over $\mathbb{F}_q$, *European J. Combin.* 28(2007), no. 4, 1262–1269.

(18) Weighted sum of the extensions of the representations of quadratic forms, *Manuscripta Math.* 124(2007), no. 2, 261–267.

(19) (with Hoseog Yu) New infinite families of 3-designs from algebraic curves of higher genus over finite fields, *Electron. J. Combin.* 14(2007).

(20) Positive definite n-regular quadratic forms, *Invent. Math.* 170(2007), no. 2, 421–453.

(21) Primitive even 2-regular positive quaternary quadratic forms, *J. Kor. Math. Soc.* 45(2008), 621-630.

(22) (with J. Bochnak) Almost regular quaternary quadratic forms, *Ann. Inst. Fourier* (Grenoble) 58(2008), 1499-1549.

(23) (with W. K. Chan, B. M. Kim and M.-H. Kim) Extensions of representations of integral quadratic forms, *Ramanujan. J.* 17(2008), 145-153.

(24) (with J. Bochnak) Almost universal quadratic forms: an effective solution of a problem of Ramanujan, *Duke Math. J.* 147(2009), 131-156.

(25) (with Z.-W. Sun) Mixed sums of squares and triangular numbers (III), *J. Number Theory* 129(2009) 964-969.

(26) (with W. K. Chan) Almost universal ternary sums of triangular numbers, *Proc. Amer. Math. Soc.* 137(2009) 3353-3562.

(27) Regular positive ternary quadratic forms, *Acta Arith.* 147(2011), 233-243.

(28) Ternary universal sums of generalized polygonal numbers, *J. Korean Math. Soc.* 48(2011), 837-847.

(29) Representations of arithmetic progressions by positive definite quadratic forms, *Int. J. Number Theory* 7(2011), 1603-1614.

(30) (with Y.-S. Ji and M.-H. Kim) Positive definite quadratic forms representing integers of the form $an^2 + b$, to appear in Ramanujan J.

• **Talks (2009∼):**

(7) Diophantine methods, lattices, and arithmetic theory of quadratic forms (Banff, Canada), Nov. 13-18, 2011

∗ The title of talk : Class number formulas for ternary quadratic forms

(6) Japan-Korea Number Theory Seminar 2011 (Nagoya, Japan), Nov. 09-12, 2011

∗ The title of talk : Some relations between the numbers of representations of ternary quadratic forms

(5) Workshop on the Arithmetic of Quadratic Forms and Integral Lattices (Futrono, Lake Ranko, Chile), Dec. 13-14, 2010

∗ The title of talk : Some relations between the numbers of representations of ternary quadratic forms

(4) Math. Colloquium (Konkuk University Seoul, Korea) Nov. 18, 2010

∗ The title of talk : Representations of ternary quadratic forms

(3) 2nd GCOE Workshop for Young Mathematicians (Kyoto, Japan), Feb. 22-23, 2010

∗ The title of talk : Ternary universal sums of polygonal numbers

(2) 2010 Korea-Japan Number Theory Seminar (Seoul, Korea), Jan. 20-23, 2010

∗ The title of talk : Arithmetic of quadratic polynomials

(1) 2009 Joint Meeting of the KMS and AMS-Arithmetic of Quadratic Forms (Ewha Womens University Seoul, Korea), Dec. 16-20, 2009

∗ The title of talk : Arithmetic of positive ternary quadratic forms