

Curriculum Vitae
Hojin KIM
Ph.D. Candidate

Personal Information

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Nationality South Korean

Education

Ph.D. candidate, Mathematical Sciences
Advisor: Bo-Hae Im, Ph.D.

KAIST
Mar. 2016 – Feb. 2025 (Expected)

AI researcher for alternative civilian service
2 years of leave of absence during Ph.D. course

TmaxData & TmaxAI, Seongnam, South Korea
Sep. 2018 – Aug. 2020

M.S. in Mathematical Sciences
Advisor: Suh Hyun Choi, Ph.D.
Thesis: Weil conjectures for elliptic curves

KAIST
Mar. 2014 – Feb. 2016

B.S. in Mathematical Sciences

KAIST
Feb. 2009 – Feb. 2014

Research Interests

Number theory Nature of period polynomials attached to certain modular forms, especially their unimodularity properties; Algebraic structures of the Multiple Zeta Values in positive characteristic.

Publications

- 2022**
- Riemann hypothesis for period polynomials attached to the derivatives of L -functions of cusp forms for $\Gamma_0(N)$ (with Bo-Hae Im), *J. Math. Anal. Appl.* 509 (2022), no. 2, Paper No. 125971.
 - Zagier-Hoffman's conjectures in positive characteristic (with Bo-Hae Im, Khac Nhuan Le, Tuan Ngo Duc, Lan Huong Pham), submitted.
 - On the common zeros of quasi-modular forms for $\Gamma_0^+(N)$ of level $N = 1, 2, 3$ (with Bo-Hae Im, Wonwoong Lee), submitted.
- 2023**
- Hopf algebras and multiple zeta values in positive characteristic (with Bo-Hae Im, Khac Nhuan Le, Tuan Ngo Duc, Lan Huong Pham), submitted.
 - Hopf algebras and alternating multiple zeta values in positive characteristic (with Bo-Hae Im, Khac Nhuan Le, Tuan Ngo Duc, Lan Huong Pham), submitted.
 - Note on linear independence of alternating multiple zeta values in positive characteristic (with Bo-Hae Im, Khac Nhuan Le, Tuan Ngo Duc, Lan Huong Pham), submitted.

- 2024** • Zagier-Hoffman’s conjectures in positive characteristic II (with Bo-Hae Im, Khac Nhuan Le, Tuan Ngo Dac, Lan Huong Pham), submitted.

Talks

19th Oct. 2022

Riemann hypothesis for period polynomials attached to the derivatives of L -functions of cusp forms for $\Gamma_0(N)$.

Special session on Automorphic Forms and q -Series, *2022 Global KMS International Conference*, October 18 – 21, Seoul, South Korea.

Nov. 2024 (upcoming)

Hopf algebra structures of Multiple Zeta Values in positive characteristics (tentative).

Workshop, *School and Workshop “Selected topics in Arithmetic Algebraic Geometry”*, October 28 – November 8, Hanoi, Vietnam.

Teaching Experience

Experience of TA for the following courses (underline for the Teaching Assistant Excellence Awards).

Calculus 1 (2015F, 2021S, 2022S, 2023S)

Calculus 2 (2014S, 2016F, 2017F, 2020F, 2021F, 2022F)

Differential Equations and Applications (2016S, 2017S)

Logic and Set Theory (2014F, 2016F)

Introduction to Linear Algebra (2021S)

Linear Algebra (2017S, 2017F, 2020F, 2021F, 2022F)

Introduction to Number Theory (2015S, 2016S, 2022S, 2023S)

Awards and Honors

National Excellence Scholarship (Natural Sciences and Engineering) Feb. 2009 – Feb. 2013
National Government of the Republic of Korea

Bronze Medal, Math Competition for College Students November 2011
Korean Mathematical Society

Teaching Assistant Excellence Award July 2021
Department of Mathematical Sciences, KAIST

Teaching Assistant Excellence Award August 2022
Department of Mathematical Sciences, KAIST

Teaching Assistant Excellence Award September 2023
Department of Mathematical Sciences, KAIST

Languages

I speak Korean (native), English (fluent), Spanish and French (Basic)

I can code in Python, Java, Mathematica, SageMath, and L^AT_EX.

Updated on April 9, 2024.