

Ikhan Choi

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EDUCATION

University of Tokyo

Apr 2023 – Now

M.S. program in Mathematical Science

Pohang University of Science and Technology

Mar 2016 – Aug 2022

B.S. in Mathematics

Early graduation: leave of absence for three years including military service

Seoul Science High School

Mar 2013 – Feb 2016

Specialized high school for gifted students

RESEARCH INTERESTS

Functional analytic features of Kasparov theory and noncommutative topology from the viewpoint of homotopy theory, and their applications to representation theory and mathematical physics.

PUBLICATIONS

I. Choi, *Curved folding and planar cutting of simple closed curve on a conical origami*

Kodai Math., 39-3 (2016), pp. 579-595.

Suggested a problem, in terms of classical differential geometry, of determining whether a closed curve on a plane can be realized as the intersection of a piecewise smooth isometric immersion of the plane and another plane embedded in \mathbb{R}^3 .

ACADEMIC EXPERIENCES

Senior thesis, POSTECH

Spring 2022

Title: *Three perspectives on Bochner's theorem: from Herglotz representation to Pontryagin duality*

Advisor: *Younghwan Son*

Investigated Bochner's theorem from three different viewpoints; complex analysis, probability theory, and representation theory using GNS construction. As an application, proved the Pontryagin duality theorem.

Undergraduate Research Program, POSTECH

Fall 2019

Title: *Global Existence of the Vlasov-Poisson System*

Advisor: *Donghyun Lee*

Proved the local existence of the Vlasov-Poisson system and reviewed Schaeffer's paper on the global existence.

IBS-CGP Mathematics Festival (Research Experience Program), POSTECH

Aug 2018

Topic: *Variations on a Theme: On the Dispersion of Waves*

Advisor: *Sung-Jin Oh*

TEACHING EXPERIENCES

Teaching Assistant

Complex Analysis I

Fall 2023

Student Mentoring Program

Mentor: MATH 423 Introduction to Differential Geometry

Fall 2019

Covered the theory of space curves and surfaces, introduction to smooth manifolds, covariant derivatives, and the Riemannian curvature tensor.

AWARDS AND HONORS

- Japanese Government (**MEXT**) Scholarship Apr 2023 – Now
Embassy recommendation, Research student
- Gold Prize** in 38th Mathematics Competition for University Students in Korea Nov 2019
1st group for math majors
Sponsored by Korean Mathematics Society

TALKS

- POSTECH – KAIST – UNIST Undergraduate Math Club Joint Seminar Aug 2019
Title: *Diachrony of Spectra*
Focusing on the word “spectrum”, followed the history of how mathematical languages are created in the interdisciplinary study of physics, analysis, and geometry.
- POSTECH Undergraduate Mathematics Seminar Nov 2018
Title: *Dispersion for the Schrödinger Equation*
Proved the dispersive inequality for the Schrödinger equation, using the theory of Fourier transforms and oscillatory integrals.

WORK EXPERIENCE

- Military Service Jan 2020 – July 2021
1st Marine Division Band, Republic of Korea Marine Corps
Military Musician (Saxophone)
- Summer Experience Society (Internship Program in POSTECH) Jun 2019 – Aug 2019
Persona AI Co., Ltd.
R&D on Natural Language Processing (Chatbot development)
Implemented probabilistic graphical models, attention model, and sentiment analyzer.

OTHER SKILLS AND QUALIFICATIONS

Language: English (fluent), Japanese (fluent), Korean (native)