# Ikhan Choi

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## EDUCATION

**University of Tokyo**                                                                                   Apr 2023(expected) – 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

Operator Algebra, Mathematical Physics, Abstract Harmonic Analysis.

## 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*
Investigted 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

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 (expected) – 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

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)

**Passed**: General Qualifying Examination for Ph.D. Program of POSTECH in Mathematics