




# Ikhan Choi

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## EDUCATION

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### Pohang Institute of Science and Technology (POSTECH)

Mar 2016 – Aug 2022

B.S. in Mathematics

Major GPA: 3.93/4.30 (3.82/4.00) Overall GPA: 3.77/4.30 (3.67/4.00)

Early graduation: leave of absence for three years

### Seoul Science High School

Mar 2013 – Feb 2016

Specialized high school for gifted students

## RESEARCH INTERESTS

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Operator Algebra, Mathematical Physics, Abstract Harmonic Analysis, Topological Quantum Groups.

## PUBLICATIONS

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### 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

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### 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

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### 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

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### Japanese Government (MEXT) Scholarship

Apr 2023 (expected) – Now

Embassy recommendation, Research students

### Gold Prize in 38th Mathematics Competition for University Students in Korea

Nov 2019

1st group for math majors

Sponsored by Korean Mathematics Society

## TALKS

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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

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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

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

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