

EDUCATION

KAIST - Korea Advanced Institute of Science and Technology

Daejeon, South Korea

B.S. in Dept. of Mathematical Sciences, summa cum laude (August 2021 expected)

2015–2021

Double major in School of Computing

GPA 4.18/4.30

Currently on leave of absence since Fall 2018 due to compulsory military service

Sejong Science High School

Seoul, South Korea

A public high school with emphasis on science and technology

2013–2015

Early graduation

AWARDS AND HONORS

Scholarships and Fellowships

- KAIST Presidential Fellowship 2016–2021
- Korea Presidential Science Scholarship, Korea Student Aid Foundation 2015–2021
 - \$2,500 per semester, 8 semesters
- Department Honors Scholarship, KAIST 2016–2017
 - Department Valedictorian, \$250 per month, 4 months (Fall 2017)
 - \$200 per month, 4 months (Fall 2016)

KAIST Honors

- Honor Student 2017–2021
 - A program to honor undergraduate students who possess outstanding grades
- College of Natural Sciences Dean's List 2018
 - Select two students per department who have shown outstanding performance up to the junior year
- KAIST Dean's List 2015–2018
 - Department of Mathematical Sciences (Spring 2017, Spring 2018)
 - Freshman (Spring 2015, Fall 2015)

Mathematics

- Simon Marais Mathematics Competition 2018–2019
 - 7th place & Stonehage Fleming/Marais Prize, Pairs, A\$666.67 per student (2019)
 - 9th place, Pairs, A\$1,000 per student (2018)
- KAIST Math Problem of the Week 2015–2016
 - First place (Fall 2016)
 - Third place (Fall 2015)
- University Students Contest of Mathematics, Korean Mathematical Society 2015
 - Gold award (2015)
- Korean Mathematical Olympiad 2013

- Excellence award in 26th Final KMO (2013)

Computer Science

- Samsung Software Membership 2017–2021
- Samsung Collegiate Programming Cup 2017–2018
 - Fifth Place Award, \$1,000 prize money (2018)
 - Fifth Place Award, \$1,000 prize money (2017)
- Connect6 Software Algorithm Contest, DS Division of Samsung Electronics 2017
 - First Prize, Preliminary at KAIST, \$1,500 per team (2017)
- ACM International Collegiate Programming Contest 2016
 - 14th Place, Daejeon Regional (2016)

RESEARCH EXPERIENCE

Individual Study

Department of Mathematical Sciences, KAIST

Advisor: Sang-il Oum, Eric Vigoda

Summer 2018

- Graph theory
- Discovering the hidden edges of a graph given by sampling proper colorings of a graph

Computer Science Project

School of Computing, KAIST

Advisor: Martin Ziegler

Fall 2017

- Theoretical computer science
- Designed and implemented tensor calculus in exact real computation paradigm
- Presented our work at the 21st Japan-Korea Workshop on Algorithms and Computation

Individual Study

School of Electrical Engineering, KAIST

Advisor: Jinwoo Shin

Winter 2017

- Interpretable machine learning
- Object localization with Class Activation Map and Local Interpretable Model-agnostic Explainer

TALKS AND PRESENTATIONS

- Posets and Dilworth's Theorem August 4th, 2020
Combinatorial Optimization Study Group
- Introduction to Combinatorial Optimization and the LP Duality May 5th, 2020
Combinatorial Optimization Study Group
- Tensor Calculus in Exact Real Computation August 26th, 2018
The 21st Japan-Korea Joint Workshop on Algorithms and Computation
- Topological Overlap in the Plane June 7th, 2018
Topics in Mathematics (Topological Methods in Combinatorics)(MAS480)
- The Kolmogorov Complexity Theory May 10th, 2018
Information Theory Study Group
- The Channel Coding Theorems March 29th, 2018
Information Theory Study Group
- Introduction to Information Theory February 26th, 2018
Information Theory Study Group

- A Finiteness Theorem and the Exact Cohomology Sequence
Riemann Surface Study Group November 29th, 2017
- Algebraic Functions and Differential Forms on Riemann Surface
Riemann Surface Study Group September 21st, 2017
- The Lebesgue Integration Theory
KAIST Math Problem Solving Club November 21st, 2016

TEACHING

- **Teaching Assistant** at Korean Mathematical Olympiad 2018
28th KMO Summer School
- **Teaching Assistant** at Korean Mathematical Olympiad 2017
30th KMO Winter School
- **Teaching Assistant** at School of Computing, KAIST Spring 2018
Operating Systems and Labs (CS330)
- **Teaching Assistant** at School of Computing, KAIST Fall 2017
Introduction to Computer Programming (CS101)

ORGANIZATIONAL ACTIVITIES

- KAIST Undergraduate Math Colloquium 2016–2021
 - Advisor (2018–2021)
 - Chief Organizer (Fall 2017, Spring 2018)
 - Organizer (2016–2017)
- Combinatorial Optimization Study Group 2020
 - Organized 12 weeks of combinatorial optimization seminars
- Information Theory Study Group 2018
 - Organized 12 weeks of information theory seminars
- KAIST 8th ACM-ICPC Mock Competition Committee 2018
 - Proposed 2 problems and prepared data sets and solutions
- KAIST 7th ACM-ICPC Mock Competition Committee 2017
 - Proposed 4 problems and prepared data sets and solutions

WORK EXPERIENCE

- Hyperconnect** Seoul, South Korea
Data Scientist 2018–2020
- Alternative military service
 - Hyperconnector of the Month (July 2019)
 - Data experiment management system: Designed and implemented a stable experiment system to manage lots of A/B testings
 - Subscription product recommendation system: Recommended products to users based on their behavior data, using Random Forest algorithm and LSTM
 - Data anomaly detection system: Used modified z -score and Twitter Seasonal Hybrid ESD algorithm to detect anomaly in data pipeline

SKILLS

- **Programming Languages:** Python, SQL (professional), C/C++, Java, Kotlin, Javascript, MATLAB, L^AT_EX(Fluent)

LANGUAGES

- **Korean:** Native
- **English:** Fluent
 - **TOEFL iBT:** 115/120 (November 2020)

EXTRACURRICULAR ACTIVITIES

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| • Member of KAIST Algorithmic Problem Solving Club
<i>Algorithm contest problem setter and committee, server admin</i> | 2016–2021 |
| • Member of Algebraic Topology Study Group
<i>Aiming to solve all problems in Algebraic Topology, A. Hatcher.</i> | 2018 |
| • Member of Riemann Surface Study Group
<i>Gave two talks on Riemann surface theory</i> | 2017 |
| • Member of KAIST Math Problem Solving Club
<i>Gave seminars on various topics</i> | 2015–2017 |
| • Volunteer at Gyeongsang Girl's High School
<i>Mentoring and tutoring program on science for female high school students</i> | 2015 |