Joonhyung Shin

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Education

Korea Advanced Institute of Science and Technology — Daejeon, South Korea
B.S. in Mathematical Sciences, GPA: 4.18/4.30 — 2015–Current
Double major in School of Computing

University of California, Berkeley — Berkeley, USA
Summer Session, GPA: 4.00/4.00 — Summer 2017

Sejong Science High School — Seoul, South Korea
Top 10 out of 160 students — 2013–2015

Awards and Honors

Scholarships and Fellowships

- KAIST Presidential Fellowship — 2016–Current
- Korea Presidential Scholarship of Science ($2,500 per semester) — 2015–Current
- Department Honor Scholarship — 2016–2017
  - $1,000 (Fall 2017)
  - $800 (Fall 2016)

KAIST Honors

- Honor Student — 2017–Current
  - A program to honor undergraduate students who possess outstanding grades
- College of Natural Science 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 2018, Spring 2017)
  - Freshman (Fall 2015, Spring 2015)

Mathematics

- Simon Marais Mathematics Competition — 2018–2019
  - 7th place (2019)
  - 9th place (2018)
- KAIST Math Problem of the Week — 2015–2016
  - First place (Fall 2016)
  - Third place (Fall 2015)
- National Undergraduate Mathematical Competition — 2015
  - Gold award (2015)
- Korean Mathematical Olympiad — 2013
  - Excellence award (top 22) in Final KMO (2013)

Computer Science

- Samsung Software Membership 2017–Current
- 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 place in KAIST ($1,500 prize money, 2017)
- ACM International Collegiate Programming Contest 2016
  - 13th Place in Daejeon Regional (2017)
  - 14th Place in Daejeon Regional (2016)

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
- Implementing 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 November 29th, 2017
  Riemann Surface Study Group
- Algebraic Functions and Differential Forms on Riemann Surface September 21st, 2017
  Riemann Surface Study Group
- The Lebesgue Integration Theory November 21st, 2016
  KAIST Math Problem Solving Club

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–Current
  - Advisor (2018–Current)
  - Chief Organizer (Fall 2017, Spring 2018)
  - Organizer (2016–2017)
- Combinatorial Optimization Study Group 2020
  - Created a study group of 6 people of various backgrounds (math, CS, industrial engineering)
  - Organized 12 weeks of combinatorial optimization seminars
- Information Theory Study Group 2018
  - Created a study group of 4 math and EE students
  - Organized 12 weeks of information theory seminars
- KAIST 8th ACM-ICPC Mock Competition Committee 2018
- KAIST 7th ACM-ICPC Mock Competition Committee 2017

Work Experience

Hyperconnect Seoul, South Korea
Data Scientist 2018–Current

- Alternative military service
- Data anomaly detection system: Used modified z-score and Facebook Prophet algorithm to detect anomaly in data pipeline
- Subscription product recommendation system: Recommended products to users based on their behavior data, using Random Forest algorithm and LSTM
- Data experiment management system: Designed and implemented a stable experiment system to manage lots of A/B testings

Skills

- **Programming Languages:** Python, SQL (professional), C/C++, Java, Kotlin, Javascript, LaTeX(Fluent)
- **Competitive Programming:** CF 2359

Languages

- **Korean:** Native
- **English:** Fluent

Extracurricular Activities

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