

Mingyu Lee

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EDUCATION

Seoul National University <i>B.Sc. in Computer science and Engineering, Double major in Mathematical Sciences</i> GPA: 4.05/4.30, Major GPA: 4.05/4.30	Seoul, Korea Mar 2021 –
Gyeonggi Science High School For The Gifted <i>Computer Science</i>	Suwon, Korea Mar 2018 – Feb 2021

RESEARCH EXPERIENCE

Research Institute of Mathematics, Seoul National University. <i>Undergraduate Researcher</i>	Seoul, Korea Jul 2022 – Present
• Explored applications and advancements of quantum machine learning, incorporating ideas from classical neural networks to improve existing methods or explore novel approaches.	

WORK EXPERIENCE

Republic of Korea Air Force <i>Mandatory Military Service</i>	Pyeongtaek-si, Gyeonggi-do, Korea Feb 2024 – Nov 2025
NCSOFT <i>Research Intern</i>	Seongnam-si, Gyeonggi-do, Korea Jul 2023 – Aug 2023
• Developing AI based Exchange Traded Fund(ETF) managing system	
Seoul National University <i>Teaching Assistant</i>	Seoul, Korea Mar 2022 – Jun 2022
• Teaching assistant(TA) for discrete mathematics	
Rainbow Brain, Inc. <i>Internship</i>	Seoul, Korea Jan 2022 – Mar 2022
• Collecting e-commerce data and providing data analysis	

AWARDS & ACHIEVEMENTS

2025 ICPC Seoul Regional <i>Bronze prize (8th place). President's Award of the National Information Society Agency (NIA)</i>	Nov 2025
2023 ICPC Seoul Regional <i>Encouragement prize (14th place). Director's award of the National Information Society Agency (NIA)</i>	Nov 2023
2023 UCPC final round <i>7th place.</i>	Jul 2023
2023 Quantum Hackathon Korea <i>1st place. Recipient of the Ministry of Science and ICT Minister's Award.</i>	Jun 2023
WorldQuant Brain research consultant	Apr 2023
QHack certificate of achievement (advanced)	Feb 2023
Xanadu QHack Coding Challenges <i>Power-Up Awards, IBM Quantum/PINQ2 and NVIDIA/Cyxtera/Run :AI</i>	Feb 2023
Samsung Collegiate Programming Cup (SCPC): 5th prize	Sep 2022
Samsung Humantech Paper Award <i>Bronze prize. "Improving Performance of Pyramid CNN used in Image Deblurring (2020)"</i>	Jul 2021

HONORS

Korea-U.S. Advanced Industries Youth Exchange Scholarship, 4th Cohort	Nov 2025 –
Seoul National University Semiconductor Characterization College Scholarship	Feb 2024 –
Young Engineers Honor Society (YEHS) <i>The National Academy of Engineering of Korea</i>	Nov 2023 –
Samsung Software Membership	Oct 2022 –
The Presidential Science Scholarship(Computer Science)	Mar 2022 –

PAPERS

M.Lee, M.Shin, J.Lee, K.Jeong, "Mutual information maximizing quantum generative adversarial networks", *Nature Scientific Reports* **15.1**, 32835 (2025).

M.Shin, S.Lee, J.Lee, **M.Lee**, D.Ji, H.Yeo, K.Jeong, "Disentangling quantum neural networks for unified estimation of quantum entropies and distance measures", *Physical Review A* **110**, 062418 (2024).

Mingyu Lee, "Improving Performance of Pyramid CNN used in Image Deblurring", (2020)

CONTRIBUTED TALKS [†]denotes the speaker.

Mingyu Lee[†], "Mutual Information Maximizing Quantum Generative Adversarial Network and Its Applications". 2nd CQNC Winter Kick-off Workshop. (Dec 2023)

Mingyu Lee[†], Myeongjin Shin, Junseo Lee and Kabgyun Jeong, "Mutual Information Maximizing Quantum Generative Adversarial Network and Its Applications", KSIAM 2023 Annual Meeting. (Nov 2023)

Sungmin Jang[†], Geumil Bae **Mingyu Lee**, "Proposing a Transformer-based ETF portfolio for liquidity providers", Korean Institute of Industrial Engineers Autumn Annual Conference (Nov 2023)

Mingyu Lee[†], "Introduction to Shadow Tomography and Its Application". 1st CQNC Winter Kick-off Workshop. (Jan 2023)

INVITED TALKS

Mingyu Lee[†], Myeongjin Shin, Junseo Lee and Kabgyun Jeong, "Mutual Information Maximizing Quantum Generative Adversarial Network and Its Applications in Finance", Quantum FinTech Webinars Series, Rethinc. Labs, Frank Hawkins Kenan Institute of Private Enterprise, The University of North Carolina at Chapel Hill, UNC Kenan-Flagler Business School, USA. (Nov 2023)

POSTER PRESENTATION

Mingyu Lee[†], Myeongjin Shin, Junseo Lee and Kabgyun Jeong, "Mutual Information Maximizing Quantum Generative Adversarial Network and Its Applications", 27th Annual Conference on Quantum Information Processing (QIP 2024), Taipei International Convention Center (TICC), Taipei (2024)

SKILLS AND QUALIFICATIONS

Programming languages & Tools

Advanced skills: C/C++, Python

Basic skills: MATLAB, Pytorch, Qiskit, Pennylane, Java/Typescript, JAVA, R, React

Algorithms and problem solving skills

Codeforces | rating 2177 (Master), max rating 2279 (Master), [red1108](#)

Atcoder | rating 1915 (1 Kyu), max rating 1929 (1 Kyu), [red1108](#)

INTERESTS

- Quantum computation and Quantum Information.
- Quantitative research and trading.
- Machine learning and it's applications.

Last updated: Jan, 2025.