

Yubin Kim

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RESEARCH INTERESTS

Astrophysics, Gravitational wave, Multi-messenger astronomy, Machine learning, Data analysis

EDUCATION

Ewha Womans University, Seoul, South Korea
Bachelor of Science in Physics
Minors in Mathematics and Philosophy

Mar. 2020 – Feb. 2026 (Anticipated)
Cumulative GPA: 3.84 / 4.30

Relevant Coursework

- Astrophysics (A+, 2025)
- Particle Physics (A+, 2024)
- Computational Physics (A+, 2023)
- Digital Image Processing (2025)
- Numerical Analysis (2024)
- Scientific Computation Programming (2024)
- Astrodynamics (2023)

RESEARCH EXPERIENCE

Undergraduate Research Intern, Computational Astrophysics Lab
Ulsan National Institute of Science and Technology

Ulsan, South Korea
July 2025 — Present

Supervisors: Prof. Kyujin Kwak

Undergraduate Research Intern, Human-Centered Artificial Intelligence Lab
Seoul National University

Seoul, South Korea
Jan. 2024 — Feb. 2025

Supervisors: Prof. Hyunggu Jung

Undergraduate Research Intern, Astrophysics Lab
Ewha Womans University

Seoul, South Korea
Dec. 2022 — Nov. 2023

Supervisors: Prof. Chunglee Kim

PUBLICATIONS & PRESENTATIONS

Journal paper

- Seong, G., **Kim, Y.**, Kwak, K., Ahn, S., Park, C., Hahn, K. I., & Kim, C. (2024). 12C+12C Reaction Rates and the Evolution of a Massive Star. *Journal of The Korean Astronomical Society*, **57**(2), 115–122. (Co-first author, Published) <https://doi.org/10.5303/JKAS.2024.57.2.115>
- **Kim, Y.** & Jung, H. “Applications of Deep Learning in Gravitational Wave Data Quality Studies: A Systematic Review.” (First author, Submitted)
- **Kim, Y.**, Min, J. & Jung, H. “Capability of Multimodal Large Language Models to Describe Gravitational Wave Images.” (First author, Submitted)

Proceeding

- **Kim, Y.**, Moon, Y., Son, J., Park, M., Min, J., & Jung, H. (2025). Analysis of the Tools for Measuring and Visualizing AI Model Carbon Emissions: A Systematic Review. *Proceedings of the HCI Korea Conference*, Gangwon, South Korea. (Oral Presentation, Co-first author)

Presentation

- (Poster) **Kim, Y.**, Kihyun Jung & Kwak, K. (2025), Unsupervised Deep Learning for KAGRA Transient Noise Classification, 13th KAGRA International Workshop, 18-19, Dec.
- (Oral) **Kim, Y.**, Kihyun Jung & Kwak, K. (2025), Deep Embedded Clustering for Classifying the Transient Noise of KAGRA, 2025 ENIGMA Collaboration Workshop on Astrophysics and Geophysics, Student Contribution Talk, 9-13, Nov.
- (Oral) **Kim, Y.** & Kwak, K. (2025), Unsupervised Deep Learning for Clustering Gravitational Wave Glitch Spectrograms, 112th Korea Astronomy Society Fall Meeting, 15-17, Oct.

HONORS & SCHOLARSHIPS

Undergraduate Major Leadership Scholarship, Ewha Womans University	<i>Fall 2023, Fall 2024</i>
Korea Toray Science Foundation Scholarship	<i>Spring 2024</i>
Ewha Womans University Department of Physics Alumni Scholarship	<i>Spring 2022, Fall 2023</i>
KB Foundation Scholarship for Basic Science	<i>Spring 2023</i>
Jicheon Scholarship, Ewha Womans University	<i>Fall 2022, Spring 2022</i>
Dean's List(for 5 semesters), Ewha Womans University	<i>2021 Fall, 2022 Spring & Fall, 2023 Fall, 2024 Fall</i>

EXTRACURRICULAR ACTIVITIES

Academic and Leadership Activities

• Participant, AstroAI Asian Network Summer School (Selected as a best group presentation)	<i>2025</i>
• Encouragement Award, AI-Based Learning Methods Contest, Ewha Womans University	<i>2025</i>
• Participant, Gravitational-Wave and Numerical Relativity Summer School	<i>2023, 2024</i>
• Participant, Gravitational-Wave and Numerical Relativity Winter School	<i>2023</i>
• Oral Presentation (1st Place), College of Natural Sciences Academic Festival, Ewha Womans University	<i>2023</i>
• Executive Member, Department of Physics Student Council, Ewha Womans University	<i>2022-2023</i>
• Member, EPAD (Ewha Physics Academic Club), Ewha Womans University	<i>2022</i>
• Member, ECC (Ewha Central Computer Club), Ewha Womans University	<i>2021</i>

Teaching and Outreach Activities

• Volunteer Lecturer, WeMajor (25th cohort)	<i>Sep. 2025-Present</i>
Participated in academic outreach activities by delivering major-related lectures and mentoring for middle school students	
• Private Math Tutor for High School Students, QANDA Online Tutoring Platform	<i>Mar. 2025-Present</i>
• Peer Tutor, Ewha Womans University	<i>2025</i>
• High School Outreach Volunteer, Ewha Womans University	<i>2023</i>
• Math Tutor for High School Students, Dragon Math Academy (Part-time)	<i>June 2022 – Dec. 2022</i>

ENGLISH TESTS

TOEFL iBT: 97 (R: 29, L: 25, S: 22, W: 21)	<i>June 2025</i>
OPIC (Oral Proficiency Interview): IH (Intermediate High)	<i>Mar. 2025</i>

SKILLS

Programming Languages : Python; Bash (basic)

Machine Learning Frameworks : PyTorch, TensorFlow, Scikit-learn

Research Tools : LaTeX (academic writing and editing), Linux, Jupyter Notebook, GitHub