Gyuna Kim

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Personal Profile

Master's student at the Graduate School of Data Science, KAIST, focusing on digital health through multimodal state modeling, real-world signal quality enhancement, and data-driven system design.

Education

Korea Advanced Institution of Science and Technology   *Daejeon, Korea*

Graduate School of Data Science   *Feb 2024 - Present*

- Master of Graduate School of Data Science
- **Advisor:** Prof. Uichin Lee, Interactive Computing Lab (ICLab)
- **Courses:** IoT Data Science, Advanced Statistics, Introduction to AI, Computational Psychiatry, Statistical Data Science Practice, War Game Modeling, Scientific Writing

Ulsan National Institution of Science and Technology   *Ulsan, Korea*

College of Information and Biotechnology   *Feb 2020 - Feb 2024*

- Bachelor of Industrial Engineering
- **Courses:** Data Mining, Time-series Analysis, Mathematical Analysis I, Statistical Computing, Statistical Quality Management, AI for Finance, Industrial Operations Management, Service Intelligence, Operations Research I, Operations Research II, Data-driven Process Management, Social Network Analysis, 3D CAD, 3D Printing

Research Projects

Enhancing Signal Quality Indices for Real-World PPG Signals   *KAIST, ICLab*

Ongoing Project   *Mar 2025 – Present*

- Defined signal quality metrics tailored for unconstrained, real-world environments using datasets such as GalaxyPPG and WildPPG.
- Currently designing an automated signal quality prediction model based on real-world PPG features.

Interactive Reporting System for Digital Health Data   *KAIST, ICLab*

Ongoing Project   *Aug 2024 – Jun 2025*

- Designed an interactive reporting system to support the evaluation of digital mental health interventions (DHI).
- Conducted user studies with clinicians and app developers using technology probe methodology.
- Explored usability, interpretability, and stakeholder decision-making support through Figma prototyping and feedback analysis.

Mood Detection using Speech and Sensor Data   *KAIST, ICLab*

Collaboration with LG Electronics   *Aug 2024 – Jun 2025*

- Developed multimodal models integrating speech, wearable, and IoT data to detect depressive symptoms.
- Implemented CNN- and attention-based fusion architectures for enhanced feature representation.
- Explored cross-modal alignment techniques to integrate features across speech and sensor modalities.

Modeling Workload Stress in Call Center Workers   *KAIST, ICLab*

Funded by NRF Graduate Research Fellowship   *Jan 2024 – Feb 2024, Jul 2024 – Present*

- Developed a workload detection model based on multimodal data to capture subtle behavioral cues in emotionally demanding scenarios.

Educational Support and Mentoring

Teaching Assistant, CS565/DS522 IoT Data Science   *Daejeon, Korea*

KAIST   *Spring 2025*

- Assisted lectures, lab sessions, and grading for a graduate-level course on IoT Data Science.

Student Supporter, Starmooc Lecture Video Production   *Ulsan, Korea*

UNIST   *Jul 2022 – Oct 2022*

- Created illustrations and subtitles to support online course content.

Mentor, Explore@UNIST   *Ulsan, Korea*
UNIST   *Jan 2022*
- Guided high school students in exploring science and engineering majors and campus life.

Mentor, Club to Club   *Ulsan, Korea*
UNIST, Ulsan Foreign Language High School   *Apr 2021 – Oct 2021*
- Mentored high school students in entrepreneurship and idea development.

Internship Experience

KAIST Interactive Computing Lab   *Daejeon, Korea*
Research Intern   *Jan 2024 – Feb 2024*
- Developed a stress detection model for call center workers by combining prosodic and linguistic features.
- Preprocessed multimodal speech and text data and experimented with feature fusion approaches.
- **Technical Skills:** Python, PyTorch, Hugging Face, Audio Processing.

INTERX   *Ulsan, Korea*
Data Analysis Intern Researcher (Part-time: 8 months, Full-time: 4 months)   *Feb 2022 – Feb 2023*
- Developed image-based instance segmentation and multi-label classification models for PCB defect inspection.
- Built an AI-assisted system for manufacturing recipe optimization to reduce defect rates.
- **Technical Skills:** Python, PyTorch, TensorFlow, OpenCV, Scikit-learn, Linux.

Trip Builder (Startup)   *Ulsan, Korea*
Data Analyst and UIUX Designer   *Feb 2021 – Aug 2021*
- Developed a travel recommendation model using user clustering and public datasets.
- Designed the initial mobile app UI and implemented a survey interface for travel tendency assessment.
- **Technical Skills:** Python, Adobe XD, Illustrator.

Achievements

2024	**Graduate Research Fellowship for Master's Students**, Fellowship awarded by the National Research Foundation of Korea	*NRF*
2022	**Encouragement prize**, 2022 UNIST-POSTECH-KAIST Data Science Competition	*KAIST*
2022	**2nd prize**, UNIST Pre-I-Corps	*UNIST*
2021	**1st prize**, AI Challenger Program(AICP)	*UNIST*
2021	**2nd prize**, Gyeonggi Content Agency Agile Hackatone	*Gyeonggi*
2020	**Advance to the finals**, Smart Maritime Logistics Entrepreneurship Contest	*UNIST*

Skills

Programming	Python, R; experience with machine learning, signal processing, and libraries such as PyTorch, Hugging Face, and OpenCV
Design	Figma, Adobe XD, Illustrator, Photoshop
3D Modeling	SolidWorks, Fusion 360, SketchUp