Jongpil Jeong

Master course, Kyushu Institute of Technology, Iizuka, ,Fukuoka, Japan
jeong.jongpil383@mail.kyutech.jp
jeongjongpil0911@gmail.com
+81-90-7269-3467
+82-10-8912-3304

RESEARCH INTERESTS

Image processing, Statistical optics, Dehaze algortihm, Digital holographic microscopy, Medical imaging system.

EDUCATION

Kyushu Institute of Technology, Iizuka, Fukuoka, Japan — Apr. 2024 — Present
Master of Engineering in Graduate School of Computer Science and Systems Engineering — Cumulative GPA: 3.20/4.00
Department of Creative Informatics

Dong-A University, Busan, Korea — Mar. 2018 — Feb. 2024
Bachelor of Engineering in Collage of Engineering — Cumulative GPA: 3.91/4.50
Department of Eletronics Engineering

ACADEMIC EXPERIENCE

Computational, Holographic and Optical signal processeing Lab. at Hankyung National University Anseong, Gyunggi-do, Korea
Researcher — Jan. 2024 — Feb. 2024

- Integral imaging systems.
- Principle of image encryption such as double random phase encryption (DRPE)

3D Optical Image System Lab at Kyushu Institute of Technology — Iizuka, Fukuoka, Japan
Researcher — Jul. 2023 — Aug. 2023

- Scattering media removal algorithm.
- Restore the low-light images.

3D Optical Image System Lab at Kyushu Institute of Technology — Iizuka, Fukuoka, Japan
Researcher — Jan. 2023 — Feb. 2023

- Principle of digital holographic microscopy.
- Improvement noise reduction algorithm.

SoC Design Lab at Dong-A University — Busan, Korea
Researcher — Sep. 2022 — Jul. 2023

- Basic image processing techniques.
- Principle of machine learning.
- C/C++, MATLAB, Python, and Verilog.

PROJECTS

Image processing research with an Industry parter (NDA-bound) — Fukuoka, Osaka, Tokyo, Niigata, Japan
Researcher — May 2024 — Present

- Conducted joint research with an industry partner under NDA, focusing on advanced image processing.
- Optical equipment design.
- Built a lightweight UI using Qt for visualization.

Image processing technology for visualizing the field of harsh visibility due to the scattering medium Fukuoka, Japan
Researcher — Apr. 2024 — Present

- Participated in a JSPS KAKENHI-funded project (JP24K01120) focused on scattering media removal.
- Proposed new method for scattering media removal and optimization.

PUBLICATIONS

Journal

[1] **J. Jeong**, and M.-C. Lee, "Scattering Medium Removal Using Adaptive Masks for Scatter in the Spatial Frequency Domain," *IEEE Access*, vol. 13, pp. 72769–72777, doi: 10.1109/ACCESS.2025.3563369, (2025)

Conference

[1] **J. Jeong**, M. Cho, and M.–C. Lee, "Advanced scattering media removal by modified ARMS and restoration of color information," 18^{th} *International Conference on Machine Vision*, (Submitted).
[2] S. Song, **J. Jeong**, M. Cho, and M.–C. Lee, "Single Haze Removal Method using Peplography," 18^{th} *International Conference on Machine Vision*, (Submitted).
[3] **J. Jeong**, M. Cho, and M.–C. Lee, "Scattering media removal under the harsh conditions using adaptive removal via mask for scatter," 40^{th} *International Technical Conference on Circuits/Systems, Computers and Communications*, (Accepted).
[4] K. Nakamura, **J. Jeong**, M. Cho, and M.–C. Lee, "Adaptive Optimization of Kalman Filtering in Digital Holographic Microscopy for Improve Noise Reduction," 40^{th} *International Technical Conference on Circuits/Systems, Computers and Communications*, (Accepted).
[5] S. Kim, **J. Jeong**, M. Cho, and M.–C. Lee, "Advanced double random phase encryption for simultaneous two primary data," 40^{th} *International Technical Conference on Circuits/Systems, Computers and Communications*, (Accepted).
[6] T. Ono, **J. Jeong**, H.–W. Kim, M. Cho, and M.–C. Lee, "Kalman filtering optimization in digital holographic microscopy (DHM)," 24^{th} *International Conference on Control, Automation and Systems*, Jeju, Korea, pp. 786–791, doi: 10.23919/ICCAS63016.2024.10773243, (2024. 10) (Scopuse).
[7] **J. Jeong**, H.–W. Kim, M. Cho, and M.–C. Lee, "A study of noise reduction algorithm using statistical optimization in digital holographic microscopy," 21^{st} *International Joint Conference on Computer Science and Software Engineering*, Phuket, Thailand, pp. 68–73, doi: 10.1109/JCSSE61278.2024.10613728, (2024. 06) (Scopuse).

Patent

[1] M.–C. Lee and **J. Jeong**, "画像処理装置、画像処理方法および画像処理プログラム" Japanse Patent 特願 2024-214715, Dec. 9, 2024.
(Not publicly accessible at this time due to confidentiality under Japanese patent law.)

Additional COURSES

IC Design Education Center

- Data structure and algortihm
- Design embedded systems based on FPGA
- FreeRTOS porting and utilization through Cortex-M processor
- MINO - theory and improvement
- Stereovision for autonomous driving system
- Design digital system utilized Verilog
- Neural network hardware accelerator "Architechture"
- DSP with MATLAB
- Foundation of CUDA-based GPU Programming
- PLL Design and Jitter Interpretation
- Foundation of reinforcement learning

Korea OpenCourseWare

- Digital Image Processing

OTHER EXPERIENCES

Dong-A Ping-Pong Association Busan, Korea
President Mar. 2021 — Feb. 2022

SKILLS

- **Programming:** C/C++, Python, MATLAB
- **Software:** PyTorch, Tensorflow, OpenCV, Qt, Pandas
- **Language:** Korean, English, Japanese