

# Jongpil Jeong

Master course  
Department of Creative Informatics  
Graduate School of Computer Science and Systems Engineering  
Kyushu Institute of Technology  
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## EDUCATION

**Kyushu Institute of Technology**, Iizuka, Fukuoka, Japan Apr. 2024 — Mar. 2026 (Expected)  
Master of Engineering, Graduate School of Computer Science and Systems Engineering Cumulative GPA: **3.20/4.00**  
Department of Creative Informatics (Computer Science and Networks)  
Planned: **30 credits** (18 credits completed as of Aug. 2025)  
Thesis (in progress): “*Visibility restoration via spatial frequency domain interpretation under harsh conditions*”  
Advisor: Prof. Min-Chul Lee

**Dong-A University**, Busan, Korea Mar. 2018 — Feb. 2024  
Bachelor of Engineering in Electronics Engineering Cumulative GPA: **3.91/4.50**  
(Top 10%; 156 credits completed / 150 required)  
Recipient of Academic Excellence Scholarships (5 semesters)

## RESEARCH INTERESTS

**Image Processing / Computer Vision**  
Optical Signal Processing  
**Denoising / Deblurring Algorithm**  
Biomedical Imaging System  
Deep Learning / Machine Learning

## SKILLS

<b>Languages</b>	Korean (Native), English (OPIc IH), Japanese (Intermediate)
<b>Programming</b>	C/C++, Python, MATLAB
<b>Libraries</b>	PyTorch, TensorFlow, OpenCV, Qt, Pandas, NumPy, SciPy, Plotly
<b>Tools / OS</b>	Docker, L <sup>A</sup> T <sub>E</sub> X, Digit Cam, Spinnaker SDK, Pylon SDK, Git, Linux, Windows, macOS

## RESEARCH PROJECTS

**視界が悪い災害現場を光信号処理とAIにより視界良好とするAR救援補助システムの開発** Fukuoka, Tokyo, Japan  
Development of an AR-Based Rescue Assistance System for Disaster Environments May 2024 — Mar. 2025  
with Poor Visibility Using Optical Signal Processing and AI  
*Research Assistant*  
Grant type: Consigned research (Funded by Fire and Disaster Management Agency of Japan)

**孵化前のニワトリにおける性別診断技術の開発** Fukuoka, Gifu, Nagoya, Tokyo, Niigata, Ibaraki, Japan  
Development of a Sex Determination Technique for Pre-Hatched Chick Embryos Mar. 2024 — Nov. 2024  
*Research Assistant*  
Grant type: Joint Research (Funded by a private industry partner under NDA)

**煙等の散乱媒質による視界不良現場を可視化するための画像処理技術の研究** Fukuoka, Japan  
Image Processing Techniques for Visualizing Low-Visibility Scenes Caused Apr. 2024 — Mar. 2025  
by Scattering Media such as Smoke  
*Research Assistant*  
Grant number: 24K01120 (Funded by KAKEN, JSPS)

## PUBLICATIONS

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### Journal

- [1] **J. Jeong**, and M.-C. Lee, “Scattering Medium Removal Using Adaptive Masks for Scatter in the Spatial Frequency Domain,” *IEEE Access*, 2025. DOI:10.1109/ACCESS.2025.3563369

### Conference

- [1] Y. Takahashi, **J. Jeong**, M. Cho, and M.-C. Lee, “A research on scattering media removal and photon estimation using COLaNoPS,” *Proc. ICCAS 2025*, (IEEE), Incheon, Korea, (Accepted).
- [2] **J. Jeong**, M. Cho, and M.-C. Lee, “Advanced scattering media removal by modified ARMS and restoration of color information,” *Proc. ICMV 2025*, (SPIE), Paris, France, (Accepted).
- [3] S. Song, **J. Jeong**, M. Cho, and M.-C. Lee, “Single Haze Removal Method using Peplography,” *Proc. ICMV 2025*, (SPIE), Paris, France, (Accepted).
- [4] **J. Jeong**, M. Cho, and M.-C. Lee, “Scattering media removal under the harsh conditions using adaptive removal via mask for scatter,” *Proc. ITC-CSCC 2025*, (IEEE), Seoul, Korea, pp. xxx-xxx, DOI: 10.1109/ITC-CSCC66376.2025.11137793
- [5] K. Nakamura, **J. Jeong**, M. Cho, and M.-C. Lee, “Adaptive Optimization of Kalman Filtering in Digital Holographic Microscopy for Improved Noise Reduction,” *Proc. ITC-CSCC 2025*, (IEEE), Seoul, Korea, pp. 1-6, DOI: 10.1109/ITC-CSCC66376.2025.11137616
- [6] S. Kim, **J. Jeong**, M. Cho, and M.-C. Lee, “Advanced double random phase encryption for simultaneous two primary data,” *Proc. ITC-CSCC 2025*, (IEEE), Seoul, Korea, pp. 1-5, DOI: 10.1109/ITC-CSCC66376.2025.11137702
- [7] T. Ono, **J. Jeong**, H.-W. Kim, M. Cho, and M.-C. Lee, “Kalman filtering optimization in digital holographic microscopy (DHM),” *Proc. ICCAS 2024*, (IEEE), Jeju, Korea, pp. 786-791, DOI:10.23919/ICCAS63016.2024.10773243
- [8] **J. Jeong**, H.-W. Kim, M. Cho, and M.-C. Lee, “A study of noise reduction algorithm using statistical optimization in digital holographic microscopy,” *Proc. JCSSE 2024*, (IEEE), Phuket, Thailand, pp. 68-73, DOI:10.1109/JCSSE61278.2024.10613728

### Patents

- [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,” Japan Patent (特願 2025-097331) “Image processing apparatus, image processing method, and image processing program”
  - [2] 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,” Japan Patent (特願 2024-214715) “Image processing apparatus, image processing method, and image processing program”
- \* In accordance with Japanese patent law, these applications are kept confidential and are not publicly disclosed for 18 months following their filing.

## Additional Research Experience

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### Computational, Holographic and Optical signal processing Lab. at Hankyung National University

Gyunggi-do, Korea  
Jan. 2024 — Feb. 2024

Visiting Research Intern

- Integral Imaging Systems
- Principle of image encryption such as double random phase encryption (DRPE)

### 3D Optical Imaging System Lab. at Kyushu Institute of Technology

Visiting Research Intern (Winter 2022 & Summer 2023)

Fukuoka, Japan  
Jan.-Feb. & Jul.-Aug. 2023

Advisor: Prof. Min-Chul Lee

- Studied digital holographic microscopy and phase error correction
- Developed noise reduction algorithms under low-light (photon-starved) conditions
- Restored low-light images using photon-counting techniques

### SoC Design Lab. at Dong-A University

Undergraduate Research Intern

Busan, Korea  
Sep. 2022 — Jul. 2023

Advisor: Prof. Bongsoon Kang

Completed the IDEC SoC Design Course (48 hours, Spring 2023), which initiated my interest in image processing and computational systems.

Topics covered: Verilog HDL fundamentals, structural and dataflow modeling, and algorithmic-level design.

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

## Relevant Coursework

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### Korea OpenCourseWare (KOCW)

- Digital Image Processing 2025

### IC Design Education Center (IDEC)

- Implementation of CNN's FPGA with Verilog HDL 2024
- Design embedded systems based on FPGA
- Data structure and algorithm
- FreeRTOS porting and utilization through Cortex-M processor
- MIMO - theory and improvement
- Stereovision for autonomous driving system 2023
- Design digital system utilized Verilog
- Neural network hardware accelerator "Architecture"
- DSP with MATLAB
- Foundation of CUDA-based GPU Programming
- PLL Design and Jitter Interpretation 2022
- Foundation of reinforcement learning

### Korea Advanced Institute of Science and Technology (KAIST)

- Microdegree from Graduate School of Data Science 2023

## Scholarships and Tuition Waivers

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### Kyushu Institute of Technology

#### Waivers from Tuition Fees

- 2025, 1<sup>st</sup> semester
- 2024, 1<sup>st</sup>/2<sup>nd</sup> semester

### Dong-A University

#### Academic Excellence Scholarship

- 2023, 1<sup>st</sup>/2<sup>nd</sup> semester
- 2022, 1<sup>st</sup> semester
- 2021, 2<sup>nd</sup> semester
- 2018, 2<sup>nd</sup> semester

#### Advisory Professor Scholarship from Dong-A University

- 2022, 2<sup>nd</sup> semester

#### Undergraduate Education Assistant Scholarship from Dong-A University

- 2023, 1<sup>st</sup>/2<sup>nd</sup> semester
- 2022, 2<sup>nd</sup> semester

## Leadership & Volunteering

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大学見本市2025～イノベーション・ジャパン  
Innovation Japan 2025  
Student Staff

Tokyo, Japan  
Aug. 21 2025 — Aug. 22 2025

オープンキャンパス 2025  
Open Campus 2025 (Iizuka Campus, Kyushu Institute of Technology)  
Student Staff

Fukuoka, Japan  
Jul. 19 2025 — Jul. 20 2025

協定校との国際交流及びセミナー  
International Capstone Design Presentation with Partner Universities  
Participant (Student Delegate)

Fukuoka, Japan  
Jan. 2025

協定校との国際共同研究打合せ及び共同セミナー  
International Joint Research Meeting and Seminar  
Participant (Student Delegate)

Kumamoto, Japan  
Aug. 9 2024 — Aug. 10 2024

Dong-A Ping-Pong Association (DAPPA)  
President

Busan, Korea  
Mar. 2021 — Feb. 2022

## Military Service

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Republic of Korea Army  
*Sergeant (E-5), Active Duty Soldier*

Haman-gun, Gyeongsangnam-do, Korea  
Apr. 2019 — Nov. 2020

- Award for Outstanding Army Warrior
- Certificate of Appointment as Squad Leader
- Appointment Certificate as Squad Representative Soldier
- Commendation for Exemplary Soldier