Jongwoon Lee

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OBJECTIVE

I am a doctoral candidate in Brain and Cognitive Engineering, specializing in advanced architectures for medical image analysis using various deep learning (DL) models. My current research centers on the implementation of multiple models for tumor infiltrating lymphocyte (TIL) detection in open-source datasets. By merging hands-on model development with theoretical rigor—and leveraging my clinical insight as a licensed medical doctor—I aim to tackle key challenges in medical AI, from robust model deployment to the creation of novel theoretical frameworks for neural networks. I began developing deep learning solutions during my PhD studies in Medicine, discovering the potential of AI to transform clinical diagnostics.

PROFESSIONAL EXPERIENCE

Peer Review Activities

Manuscript Reviewer, Journal of Pathology and Translational Medicine   03/2025

Korea University, Guro Hospital, South Korea   03/2024 - Present

Clinical Assistant Professor of Practice, Department of Pathology

- Led deep learning research and contributed to scientific publications on computational pathology.
- Served as evaluators for the performance of breast cancer metastatic lymph node segmentation at DeepBio and AIVIS co.
- Mentored residents and medical students in computational pathology techniques, combining clinical expertise with deep learning applications

Dept. of Pathology, Asan Medical Center, South Korea   03/2018 – 02/2024

Resident and Fellow

- Oversaw and facilitated 70+ interdepartmental and intradepartmental conferences.
- Served as Chief Resident for six months and subsequently appointed as Chief Fellow for an additional six months.

EDUCATION

Ph.D. Candidate, Department of Brain and Cognitive Engineering, Korea University   **Seoul, KR**
Advisor: Prof. Dong-Joo Kim, Dept. of Brain and Cognitive Engineering, Korea University   2024-Present

M.D./Ph.D., Medicine, Ulsan University College of Medicine   **Seoul, KR**
Advisor: Assistant Prof. Hee Jin Lee, Dept. of Pathology, Asan Medical Center   2022-2024

M.Sc., Medicine, Ulsan University College of Medicine   **Seoul, KR**
Advisor: Prof. Jihun Kim, Dept. of Pathology, Asan Medical Center   2019-2021

M.D., Ulsan University College of Medicine   **Seoul, KR**
          2010-2017

PUBLICATIONS (FIRST AUTHOR)

- **Lee J**, et al. Breast Cancer Research, 2024; "Factors Associated with Engraftment Success of Patient-Derived Xenografts of Breast Cancer"
- **Lee J**, et al. Journal of Pathology and Translational Medicine, 2024; "High-Grade Transformation of a Pancreatic Neuroendocrine Microtumor in a Patient with Von Hippel-Lindau Syndrome: A Case Report"
- **Lee J**, et al. Journal of Pathology and Translational Medicine, 2022; "Extremely Well-Differentiated Adenocarcinoma of the Stomach: Diagnostic Pitfalls in Endoscopic Biopsy"
- **Lee J**, et al. Journal of Pathology and Translational Medicine, 2020; "Breast Implant-Associated Anaplastic Large Cell Lymphoma: The First South Korean Case"
- **Lee J**, et al. Neurointervention, 2015; "Enlarged Parent Artery Lumen at Aneurysmal-Neck Segment in Wide-Necked Distal Internal Carotid Artery Aneurysms"

SUBMITTED MATERIAL UNDER REVIEW (FIRST AUTHOR)

- **Lee J**, et al. Artificial Intelligence-based Assessment of Tumor-infiltrating Lymphocytes in Tongue Cancer: Validation as an Independent Prognostic Factor with Established Risk Parameters: Submitted material under review, 2025.03
- **Lee J**, Yang Y., Jung D., et al., The expression and clinical relevance of LRRC15+ cancer-associated fibroblast in colorectal cancer, Submitted material under review, 2024.09

CONFERENCE PRESENTATION (PRIMARY PRESENTER, LECTURER)

The Korean Society of Pathologists Spring Conference
- Genitourinary Pathology in 2025: Key Updates & Future Directions (Lecturer)   2025

The Korean Society of Cytopathology Spring Conference
- The ancillary tests for urinary cytology diagnosis in the era of Paris System (Lecturer)   2025

The United States and Canadian Academy of Pathology   2025
- Weakly Supervised Learning for Predicting Recurrence and Invasion in Bladder Cancer from Transurethral Resection Specimens (Poster).

American Society of Clinical Oncology (ASCO) Breakthrough   2024
- Evaluation of Prognostic Factors for Oral Tongue Squamous Cell Carcinoma: Significance of Invasive Front Tumor Infiltrating Lymphocytes, Lymph Node Ratio, Tumor Size, and Depth of Invasion (Poster).

Asian Society of Digital Pathology   2024
- Artificial Intelligence Assisted Tumor Infiltrating Lymphocytes as Predictors of Tumor Recurrence in Transurethral Resection of Bladder Cancer (Poster).

The 76th Annual Fall Meeting of the Korean Society of Pathologists   2024
- Epithelial-to-mesenchymal Transition in the Extranodal Extension of Distal Extrahepatic Bile Duct Carcinoma with Artificial Intelligence-assisted Analyses (International Poster Presentation).

San Antonio Breast Cancer Symposium   2023
- The Principal Factors Associated with PDX Engraftment in Breast Cancer (Poster).

Korean Society of Pathology Spring Conference   2023
- My Interesting Case: Extrauterine and Extraovarian Müllerian Adenosarcoma (Speaker).

Korean Society of Pathology Fall Conference   2023
- A Comparative Study on HER2 Immunohistochemical scoring performance using Vision Transformer and DenseNet-201 (Poster).
- The Clinicopathologic Variables Associated with PDX Engraftment (Poster).
- Prognostic Impact of Extranodal Extension in Distal Extrahepatic Bile Duct carcinoma (Poster).

San Antonio Breast Cancer Symposium   2022
- The Principal Factors Associated with the Engraftment Success of Patient-Derived Xenograft of Breast Cancer (Poster).

Korean Society of Pathology Fall Conference   2022
- The Clinicopathologic Variables Associated with PDX Engraftment (Poster).
- Number of Metastatic Lymph Nodes and Perineural Invasion (English Platform).

Korean Society of Pathology Fall Conference   2021
- Pancreatic neuroendocrine microadenoma with high grade transformation: a case report (Poster).

Korean Society of Pathology Fall Conference   2020
- Extremely Well-Differentiated Adenocarcinoma of the Stomach: Diagnostic Pitfalls in Endoscopic Biopsy (Poster).

Korean Society of Cytopathology Fall Meeting   2019
- Malignant lymphoma of uterine cervix with carcinoma-like morphology on cervicovaginal smear: A case report (Poster).

Korean Society of Pathology Fall Conference   2018
- Myxoid variant of epithelioid mesothelioma of the peritoneum: a case report (Poster).

HONORS AND AWARDS

Selected for USCAP 2025 International Conference Travel Grant, Korean Society of Pathologists	2024
Excellence in Research Award, Asan Medical Center	2021
Best Abstract Award, Korean Society of Cytopathology, Fall Meeting "Malignant lymphoma of uterine cervix with carcinoma-like morphology on cervicovaginal smear: A case report"	2020
Awarded Medical School Scholarship Type A at University of Ulsan Graduate School of Medicine, totaling 8,155,000 Won over 8 semesters	2019-2023
Admitted as the top of the class, M.Sc., Medicine, Ulsan University College of Medicine	2019.09
Awarded merit-based scholarships totaling 16,432,000 Won over 7 semesters at University of Ulsan College of Medicine	2012-2015

PROFESSIONAL MEMBERSHIPS

Member, United States and Canadian Academy of Pathology (USCAP)	2024-
Member, The Korean Society of Pathologists	2018-
Member, Genitourinary Pathology Study Group	2024-
Member, Molecular Pathology Study Group	2024-
Member, Breast Pathology Study Group	2024-

CERTIFICATIONS

- Board Certification in Pathology, South Korea, 2022
- Medical License, South Korea, 2017
- TOEFL IBT 115/120, 2009