TRINH T.L. VUONG

Address: (02474), 7, Jegi-ro 2-gil, Dongdaemun-gu, Seoul, South Korea
Phone:(+82) 10 5778 1579 ⋄ **Email**: trinhvg@korea.ac.kr
Github: https://github.com/trinhvg ⋄ **Publications**: Google scholar

RESEARCH INTERESTS & LATEST PROJECTS

My research focuses on multimodal learning for medical AI agents, integrating vision, language, and action to improve diagnostic reasoning and human-AI interaction.

Slide-VLA: Learning Where to Look in Whole-Slide Images via Vision-Language-Action Agents (Ongoing project).

ViDRiP-LLaVA: A Dataset and Benchmark for Diagnostic Reasoning from Pathology Videos [*code+dataset*] (Under review)

EDUCATION

Korea University, Korea *09/2021 - 02/2026 (anticipated)*
Ph.D. of Electrical and Computer Engineering Advisor: *Jin Tae Kwak*
Funded by Hyundai Motor Chung Mong-Koo Global Scholarship

University of Warwick, UK *Winter+Summer 2022, 2023*
Visiting Research Student in Computer Science Advisor: *Nasir M. Rajpoot*
Project: *Robust Pathology Image Analysis with Domain-Invariant through Self-supervised Learning*

Sejong University, Korea *03/2019 - 02/2021*
Master of Computer Science and Engineering Advisor: *Jin Tae Kwak*
Thesis: *Multi-scale and Multi-task Deep Learning for Cancer Grading in Pathology Images*

Dalat University, Vietnam *08/2014 - 06/2018*
Bachelor of Mathematics Teacher Education (Graduated 2nd in class) Advisor: *Dang Tuan Hiep*
Thesis: *Groebner Bases and The Problem of Finding Images of Rational Maps*

WORK EXPERIENCE

Intel, Saigon Hitech Park, Vietnam *8/2018 - 02/2019*
Data Engineer

Monitoring, analyzing, and visualizing process control system data to optimize process and equipment performance. Developing a rule-based system for automated repair scheduling.

SELECTED CONFERENCE PROCEEDINGS

1. **T.T.L. Vuong**, and J.T. Kwak, ViDRiP-LLaVA: A Dataset and Benchmark for Diagnostic Reasoning from Pathology Videos. (Under Review) *(PDF)* (2025).

2. **T.T.L. Vuong**, Q. Dang, M. Jahanifar, S. Graham, J.T. Kwak, N. Rajpoot, IMPaSh: A novel domain-shift resistant representation for colorectal cancer tissue classification, Medical Computer Vision - European Conference on Computer Vision (**ECCV**) Workshop, Oct. 23, 2022. *(arXiv)*

3. **T.T.L. Vuong**, K. Kim, B. Song, J.T. Kwak. Ranking loss: A ranking-based deep neural network for colorectal cancer grading in pathology images, **MICCAI** 2021. *(Paper)*

4. **T.T.L. Vuong**, Doanh C. Bui, and J.T. Kwak, QuIIL at T3 challenge: Towards Automation in Life-Saving Intervention Procedures from First-Person View. AI for Brain Lesion Detection and Trauma Video Action Recognition. Lecture Notes in Computer Science, 2024 *(Paper)*

5. A.T. Nguyen, **T.T.L. Vuong**, J.T. Kwak, Towards a text-based quantitative and explainable histopathology image analysis, **MICCAI** 2024.

6. D.C. Bui, **T.T.L. Vuong**, J.T. Kwak, FALFormer: Feature-aware Landmarks Self-attention for Whole-slide Image Classification, **MICCAI** 2024.

7. **T.T.L. Vuong**, and J.T. Kwak, Exploring the Impact of Boosting knowledge distillation via random Fourier features for prostate cancer grading in histopathology images, 5th DART - **MICCAI** Workshop, 2023.

8. **T.T.L. Vuong**, and J.T. Kwak, Quintet Margin Loss for an Improved Knowledge Distillation in Histopathology Image Analysis - SPIE Medical Imaging 2021: Digital Pathology, Feb. 19- 23, 2023.

9. **T.T.L. Vuong**, D. Lee, J.T. Kwak, K. Kim. Multi-task Deep Learning for Colon Cancer Grading, 19th ICEIC, IEEE. Jan.19-22, 2020. *(Paper)*

SELECTED JOURNAL PAPERS

1. **T.T.L. Vuong**, S. Graham, Q.D. Vu, N. Alemi, N. Rajpoot, J.T. Kwak, MiTHras: Task-specific Hierarchical Semi-supervised Contrastive Masked Autoencoder for Mitotic Figure Analysis (Under Review).

2. **T.T.L. Vuong**, J.T. Kwak, MoMA: Momentum Contrastive Learning with Multi-head Attention-based Knowledge Distillation for Histopathology Image Analysis, Medical Image Analysis, 2025. *(Paper)*

3. **T.T.L. Vuong**, B. Song, J.T. Kwak, K. Kim, Prediction of Epstein-Barr virus (EBV) status in gastric biopsy specimens using deep learning algorithm, JAMA Network Open, 2022, 5(10) *(Paper)*

4. **T.T.L. Vuong**, K. Kim, B. Song, J.T. Kwak. Joint Categorical and Ordinal Learning for Cancer Grading in Pathology Images, Medical Image Analysis, 2021. *(Paper)*

5. **T.T.L. Vuong**, E. Kim, B. Song, K. Kim. Y.M. Cho, J.T. Kwak. Multi-scale Binary Pattern Encoding Network for Cancer Classification in Pathology Images, IEEE Journal of Biomedical and Health Informatics (J-BHI), 2022. *(Paper)*

6. M. Jahanifar, M. Raza, K. Xu, **T.T.L. Vuong**, R. Jewsbury, A. Shephard, N. Zamanitajeddin, J.T. Kwak, S.E.A. Raza, F. Minhas, N. Rajpoot, Domain Generalization in Computational Pathology: Survey and Guidelines, Computing Surveys, 2025, 57(11)

7. S. Graham, Q.D. Vu, M. Jahanifar, M. Weigert, U. Schmidt, W. Zhang, J. Zhang, S. Yang, J. Xiang, Xiyue Wang, J.L. Rumberger, E. Baumann, P. Hirsch, L. Liu, C. Hong, A.I. Aviles-Rivero, A. Jain, H. Ahn, Y. Hong, H. Azzuni, M. Xu, M. Yaqub, Marie-Claire Blache, B. Piégu, B. Vernay, T. Scherr, M. Böhland, K. Löffler, J. Li, W. Ying, C. Wang, D. Snead, S.E.A. Raza, F. Minhas, N.M. Rajpoot, **The CoNIC Challenge Consortium**, CoNIC Challenge: Pushing the frontiers of nuclear detection, segmentation, classification and counting, Medical Image Analysis, 2024,

8. S.F. Abbas, **T.T.L. Vuong**, K. Kim, B. Song, J.T. Kwak, Multi-cell type and multi-level graph aggregation network for cancer grading in pathology images, Medical Image Analysis, 2023,

9. Doan, T. N., Song, B., **T.T.L. Vuong**, Kim, K., Kwak, J. T.. SONNET: A self-guided ordinal regression neural network for segmentation and classification of nuclei in large-scale multi-tissue histology images. IEEE Journal of Biomedical and Health Informatics, 26(7), 3218-3228.(J-BHI), 2022.

SERVICE

- Journal reviewer: IEEE J-BHI, Nature Scientific Report, Information Fusion.

- Conference reviewer: ICCV 2025, MICCAI 2023-2025, ECCV Workshop 2022, NeurIPS Workshop 2022.

- Organizer: DomGen2023 Workshop Domain Generalization in Medical Imaging.

PARTICIPANT IN CHALLENGES

- **1st** VQA task and was placed **2nd** in Action Recognition and Action Anticipation tasks in Trauma THOMPSON challenge at MICCAI2023

- **3rd** in Automated Gleason Grading Challenge (AGGC) at MICCAI2022

- **19th/1327** in UBC Ovarian Cancer Subtype Classification and Outlier Detection (UBC-OCEAN)

- 16th-F1, 25th-running time in CellSeg NeurIPS22

- 11th in PAIP 2021 Challenge: Perineural Invasion in Multiple Organ Cancer

AWARDS

Odon Vallet Scholarship	2016
Luong Van Can Undergraduate Scholarship	2015-2018

SKILLS

Programming Languages	Python, C++, JMP
Deep Learning Tools	PyTorch
Histopathology Image Tools	QuPath
English	IELTS: 7.0 (2020)
	(Listening 8.0, Reading 8.5, Writing 6.0, Speaking 6.0)

REFERENCES

Dr. Jin Tae Kwak, Professor, Korea University	jkwak at korea.ac.kr
Dr. Nasir M. Rajpoot, Professor, University of Warwick	N.M.Rajpoot at warwick.ac.uk
Dr. Simon Graham, CTO, Histofy	s.graham@histofy.ai
Dr. Dang Tuan Hiep, Associate Professor, Dalat University	hiepdt at dlu.edu.vn