



## Curriculum Vitae

# Van Thuy Hoang

### Personal Detail

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Full name	Hoang Van Thuy (Mr.)
Date of Birth	20-01-1990
Nationality	Vietnam
Current Address	Bucheon city, South Korea
Email	hoangvanthuy90@gmail.com
Website	<a href="https://hoangvanthuy90.github.io/">https://hoangvanthuy90.github.io/</a>
Google scholar	<a href="https://scholar.google.com.vn/citations?user=E7Cc8rAAAAAJ">https://scholar.google.com.vn/citations?user=E7Cc8rAAAAAJ</a>

### Research Interests

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My research focuses on AI for Science & Bioinformatics, analyzing and interpreting biomedical data (molecules). I am interested in using GNNs, Graph Transformers, and Large Language Models to advance knowledge discovery. Key areas of interest include:

- **Foundation Models:** Pre-training & Adaptation strategies, Self-Supervised Learning.
- **Graph Learning:** Graph Structure Learning, Molecular Learning, Knowledge Graphs.
- **AI for Bioinformatics:** Graph Neural Networks, Graph Transformers.
- **Theoretical Foundations:** Information Theory, Causal Inference, Multi-view Learning, Explainable AI, Fairness Learning, Pattern Recognition.

### Education

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9/2022 – 3/2026	Ph.D. in Artificial Intelligence, The Catholic University of Korea, South Korea.
2017 – 2018	M.S. in Information System, Le Quy Don Technical University, Vietnam.
2008 – 2013	B.S. in Information Technology, Le Quy Don Technical University, Vietnam.

### Selected Publications (*Top-tier conferences/journals*)

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#### 2024 - 2025:

- Van Thuy Hoang, O-Joun Lee. *Pre-training Graph Neural Networks on Molecules by using Subgraph-conditioned Graph Information Bottleneck*. In Proceedings of the 39th AAAI Conference on Artificial Intelligence (AAAI 2025) (**Rank A\***)
- Van Thuy Hoang, Hyeon-Ju Jeon, O-Joun Lee. *Mitigating Degree Bias in Graph Representation Learning with Learnable Structural Augmentation and Structural Self-attention*. IEEE Transactions on Network Science and Engineering (IEEE TNSE 2025) (**Top 1.8% JCR**)
- Van Thuy Hoang, O-Joun Lee. *Transitivity-Preserving Graph Representation Learning for Bridging Local Connectivity and Role-based Similarity*. In Proceedings of the 38th AAAI Conference on Artificial Intelligence (AAAI 2024) (**Rank A\***)

## Full Publications

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### 2025:

1. Van Thuy Hoang, O-Joun Lee. Pre-training Graph Neural Networks on Molecules by using Subgraph-conditioned Graph Information Bottleneck. In Proceedings of the 39th AAAI Conference on Artificial Intelligence 2025 (AAAI 2025).
2. Van Thuy Hoang, Hyeon-Ju Jeon, O-Joun Lee. Mitigating Degree Bias in Graph Representation Learning with Learnable Structural Augmentation and Structural Self-attention. IEEE Transactions on Network Science & Engineering 2025. (Top 1.8% JCR)
3. Van Thuy Hoang, Tien-Bach-Thanh Do, Jinho Seo, Seung Charlie Kim, Luong Vuong Nguyen, Duong Nguyen Minh Huy, Hyeon-Ju Jeon, O-Joun Lee. Halal or Not: Knowledge Graph Completion for Predicting Cultural Appropriateness of Daily Products. IEEE Access, 2025.
4. Van Thuy Hoang, O-Joun Lee: Pre-training Graph Neural Networks on 2D and 3D Molecular Structures by using Multi-View Conditional Information Bottleneck. 08/2025. *Under review*.
5. Van Thuy Hoang, O-Joun Lee: Context-aware Graph Causality Inference for Few-Shot Molecular Property Prediction. 08/2025. *Under review*.

### 2024:

6. Van Thuy Hoang, O-Joun Lee. Transitivity-Preserving Graph Representation Learning for Bridging Local Connectivity and Role-based Similarity. In Proceedings of the 38th AAAI Conference on Artificial Intelligence 2024 (AAAI 2024).
7. Nam-Gyu Jung, Van Thuy Hoang, O-Joun Lee, Chang Choi. Kiosk Recommend System based on Self-Supervised Representation Learning of User Behaviors in Offline Retail. IEEE Internet of Things Journal, February 2024. (Top 3.4% JCR)

### 2023:

8. Van Thuy Hoang, T. S. Nguyen, S. Lee, J. Lee, L. V. Nguyen, O.-J. Lee. Companion Animal Disease Diagnostics Based on Literal-Aware Medical Knowledge Graph Representation Learning. IEEE Access, 2023.
9. Van Thuy Hoang, Hyeon-Ju Jeon, Eun-Soon You, Y.W. Yoon, Sungyeop Jung, O-Joun Lee. Graph Representation Learning and Its Applications: A Survey. Sensors, 2023.

### 2018:

10. Van Thuy Hoang, Phan Viet Anh, and Nguyen Xuan Hoai. "Automated large program repair based on big code." In Proceedings of the 9th International Symposium on Information and Communication Technology 2018 (ISICT 2018)
11. Ly Vu, Van Thuy Hoang, Uy Nguyen, Tran Ngoc, Diep Nguyen, Hoang Dinh, Eryk Dutkiewicz. Time Series Analysis for Encrypted Traffic Classification: A Deep Learning Approach. In Proceedings of the 18th International Symposium on Communications and Information Technologies 2018 (ISCIT 2018).

## Academic Services

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- Conference Reviewer: AAAI-26, ICLR-26
- Journal Reviewer: Pattern Recognition, Journal of Big Data, Neurocomputing, Knowledge-Based Systems, Expert Systems with Applications, npj Computational Materials, Information Sciences.

## Preprint

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12. Van Thuy Hoang, O-Joun Lee: A Survey on Structure-Preserving Graph Transformers. 01/2024. arXiv preprint. arXiv:2401.16176.
13. Thanh Sang Nguyen, Jooho Lee, Van Thuy Hoang, O-Joun Lee: Connector 0.5: A unified framework for graph representation learning. 04/2023. arXiv preprint. arXiv:2304.13195

## References

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### **Prof. O-Joun Lee**

Assistant Professor  
The Catholic University of Korea (CUK), South Korea.  
Ph.D. Supervisor                      E-mail: ojlee@catholic.ac.kr

### **Prof. Nguyen Xuan Hoai**

Associate Professor  
Co-founder at AI Academy Vietnam; Assoc. Prof., Ho Chi Minh City University of Technology (HUTECH), Vietnam.  
M.S. Supervisor                      E-mail: nxhoai@aiacademy.edu.vn

### **Prof. Cao Van Loi**

Le Quy Don Technical University, Vietnam.  
B.S. Supervisor                      E-mail: loi.cao@lqdtu.edu.vn