

# Khiem H. Le (B.Sc.)

## PERSONAL INFORMATION

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### Research Assistant

VinUniversity, Hanoi, Vietnam

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Homepage: <https://lhkhiem28.github.io>

LinkedIn: <https://www.linkedin.com/in/lhkhiem28>

## EDUCATION

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### B.Sc., Mathematics and Computer Science

Sep 2017 - Sep 2021

Vietnam National University - University of Science (VNUHCM-US)

Thesis: [Vietnamese Sentiment Classification Using Deep Learning Methods](#) - GPA: 3.0/4.0

## RESEARCH EXPERIENCE

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### Research Assistant

Jan 2023 - Present

[Information Security Lab](#)

VinUniversity

- *Federated Domain Generalization*  
Design an efficient Federated Learning algorithm for training Deep Learning models to comprehensively distill domain-invariant representation, enabling the global model robust to data distribution shift.
- *Federated Learning and Internet of Things*  
Design and conduct extensive experiments on a large network of IoT devices in an experimental study to understand the behaviors of Federated Learning algorithms in real-world settings.

### Research Assistant

Jan 2022 - Dec 2022

[VinUni-Illinois Smart Health Center](#)

VinUniversity

- *ECG-Based Arrhythmia Detection*  
Develop and deploy a highly accurate, lightweight, and explainable Deep Learning system for identifying abnormal heart rhythms based on reduced-lead electrocardiograms.

### Research Intern

Oct 2020 - Dec 2021

[Smart Health Center](#)

Vingroup Big Data Institute

- *Abnormality Detection on Chest Radiographs*  
Propose a training strategy for Deep Learning detectors to leverage annotations from multiple experts to improve the performance of thoracic abnormalities detection on chest radiographs.

### Research Intern

Jan 2020 - Sep 2020

[Artificial Intelligence Solution for Industrial Applications Research Lab](#)

VNUHCM-US

- *Vietnamese Natural Language Processing*  
Propose a Mixture-of-Experts mechanism to take advantage of multiple pre-trained language models and tackle the shortage of available annotated data for the Vietnamese sentiment classification task.

## TEACHING EXPERIENCE

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### Academic Mentor

Jan 2023 - Present

[FPT FUNIX](#)

- *Machine Learning Series*  
Resolve learners' issues during lectures studying. Grade programming assignments and final exams.

- *Undergraduate Research Opportunities Program (UROP)*  
Prepare undergraduates with practical knowledge of Deep Learning and the skills required for doing research.

## ***SELECTED PUBLICATIONS***

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### ***UNDER REVIEW***

GT Do, [KH Le](#), TT Nguyen, QH Pham, BT Nguyen, TN Doan, C Liu, R Savitha, X Li, SCH Hoi  
[HyperRouter: Toward Efficient Training and Inference of Sparse Mixture of Experts via HyperNetwork](#)  
Under Review at **Empirical Methods in Natural Language Processing (EMNLP 2023)**

Khiem Le-Huy, Long Ho-Tuan, Cuong Do-Danh, Danh Le-Phuoc, Kok-Seng Wong  
[Comprehensive Domain-Invariant Features Learning for Federated Domain Generalization](#)  
Under Review at **Advances in Neural Information Processing Systems (NeurIPS 2023)**

Khiem Le-Huy\*, Kok-Seng Wong\*, Manh Nguyen-Duc\*, Long Ho-Tuan, Cuong Do-Danh, Danh Le-Phuoc  
[An Empirical Study of Federated Learning on IoT-Edge Devices: Resource Allocation and Heterogeneity](#)  
Under Review at **IEEE Transactions on Neural Networks and Learning Systems**

### ***PUBLISHED***

Khiem H. Le, Hieu H. Pham, Thao BT. Nguyen, Tu A. Nguyen, Tien N. Thanh, Cuong D. Do  
[Enhancing Deep Learning-Based 3-Lead ECG Classification With Heartbeat Counting and Demographic Data](#)  
**IEEE-EMBS Conference on Biomedical Engineering and Sciences (IECBES 2022)**

Khiem H. Le, Hieu H. Pham, Thao BT. Nguyen, Tu A. Nguyen, Tien N. Thanh, Cuong D. Do  
[LightX3ECG: A Lightweight and Explainable Deep Learning System for 3-Lead Electrocardiogram Classification](#)  
**Biomedical Signal Processing and Control**

Khiem H. Le\*, Tuan V. Tran\*, Hieu H. Pham, Hieu T. Nguyen, Tung T. Le, Ha Q. Nguyen  
[Learning From Multiple Expert Annotators for Enhancing Anomaly Detection in Medical Image Analysis](#)  
**IEEE Access**

Cuong V. Nguyen, [Khiem H. Le](#), Anh M. Tran, Quang H. Pham, Binh T. Nguyen  
[Learning for Amalgamation: A Multi-Source Transfer Learning Framework for Sentiment Classification](#)  
**Information Sciences**

## ***ACHIEVEMENTS***

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Salutatorian	VNUHCM-US Entrance Exam 2017
Gold Medalist	20 <sup>th</sup> Vietnam Southern Mathematical Olympiad for High School Students 2015

## ***LANGUAGES***

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Vietnamese	Native
English	IELTS 6.5 (Overall)

## ***REFERENCES***

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Kok-Seng Wong, Ph.D	Associate Professor College of Engineering and Computer Science, VinUniversity <a href="mailto:wong.ks@vinuni.edu.vn">wong.ks@vinuni.edu.vn</a>
Binh T. Nguyen, Ph.D	Associate Professor Department of Mathematics and Computer Science, VNUHCM-US <a href="mailto:ngtbinh@hcmus.edu.vn">ngtbinh@hcmus.edu.vn</a>