Khiem H. Le (B.Sc.)

PERSONAL INFORMATION

Research Assistant
VinUniversity, Hanoi, Vietnam
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EDUCATION

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: 7.06/10.0

RESEARCH EXPERIENCE

Research Assistant Jan 2023 - Present
Security and Artificial Intelligence 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
VinBigData 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

Academic Mentor Jan 2023 - Present
FPT FUNiX

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

Teaching Assistant Apr 2023 - Jun 2023
VinUniversity

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

SELECTED PUBLICATIONS

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

Salutatorian VNUHCM-US Entrance Exam 2017
Gold Medalist 20^{th} Vietnam Southern Mathematical Olympiad for High School Students 2015

LANGUAGES

Vietnamese Native
English IELTS 6.5 (Overall)

REFERENCES

Kok-Seng Wong, Ph.D Associate Professor
College of Engineering and Computer Science, VinUniversity
wong.ks@vinuni.edu.vn

Binh T. Nguyen, Ph.D Associate Professor
Department of Mathematics and Computer Science, VNUHCM-US
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