

Trung-Hieu Hoang

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EDUCATION

Electrical and Computer Engineering, University of Illinois Urbana-Champaign (UIUC)	Illinois, USA
<i>Doctor of Philosophy (Ph.D.)</i>	6/2020-12/2025
<ul style="list-style-type: none">Research interest: computer vision and machine learning, image and signal processing, AI for healthcare, human motion analysis, 3D human pose estimation, test-time adaptation, and federated learning.GPA: 4.0/4.0.Academic advisor: Prof. Minh N. Do.	
Computer Science, University of Science, VNU-HCM	Ho Chi Minh City, Vietnam
<i>Bachelor of Science, Honor Program</i>	8/2015-10/2019
<ul style="list-style-type: none">GPA: 9.25/10.0 (Top 2/600 - Degree class: <i>Excellent</i>).Academic advisor : Prof. Minh-Triet Tran.	

WORK EXPERIENCE

Google Research	California, USA
<i>Research Intern at Health AI Team</i>	5/2025-8/2025
<ul style="list-style-type: none">Description: Developing an automated motion features extraction pipeline for improving fine-grained human motion understanding capabilities of large Vision-Language Models (VLMs).Collaborators: Theo Guidroz, Craig Schiff, and Xiang Ji.	
Samsung Research America	Texas, USA
<i>Student Intern at Mobile Processor Innovation (MPI) Lab</i>	6/2024-9/2024
<ul style="list-style-type: none">Description: Designing deep neural network architectures for multi-frame image processing algorithms.Collaborators: Dr. Long N. Le, Dr. Seok-Jun Lee, and Dr. Hamid Sheikh.	
Orthopedics & Sports Medicine Center, Vinmec Healthcare System	Ha Noi, Vietnam
<i>Student Intern at Human Motion Analysis Laboratory</i>	6/2023-9/2023
<ul style="list-style-type: none">Description: Conducting musculoskeletal simulation with VICON optical motion capture system and validating the reliability of single-view, smartphone-based human kinematics analysis for healthcare applications.Advisor: Dr. Ho Ngoc Minh.	
Argonne National Laboratory	Illinois, USA
<i>Student Intern at Data Science Learning (DSL) Division</i>	6/2022-9/2022
<ul style="list-style-type: none">Description: Enhancing the capabilities of APPFLx: <i>Argonne Privacy-Preserving Federated Learning</i> framework, and conducting experiments on detecting COVID-19 abnormalities from chest radiographs task.Advisor: Ravi K. Madduri.	
Coordinated Science Laboratory, University of Illinois at Urbana-Champaign	Illinois, USA
<i>Student Intern at Computational Imaging Group (CIG)</i>	9/2019-11/2019
<ul style="list-style-type: none">Description: Developing the <i>Digitized Neurological Examination</i> system to collect, visualize, annotate, and quantify digital biomarkers from neurological exams with 3D cameras, smartphones, and wearable sensors.Advisor: Prof. Minh N. Do.	
College of Engineering and Computer Science, VinUniversity	Ha Noi, Vietnam
<i>Teaching Assistant and Lab Instructor</i>	1/2021-5/2021
Software Engineering Laboratory, University of Science, VNU-HCM	Ho Chi Minh City, Vietnam
<i>Research Assistant at Multimedia and Human Computer Interaction Group</i>	8/2018-9/2019
<ul style="list-style-type: none">Description: Developing a <i>computer-aided diagnostic system</i> to help physicians detect abnormalities and key anatomical landmarks in the gastrointestinal tract from endoscopic images. Participating in AI/ML challenges: <i>AI City challenge</i>, <i>Video Instance Segmentation – the DAVIS challenge</i>, and <i>Visual Life-logging</i>.Advisor: Prof. Minh-Triet Tran.	

SKILLS

- Programming languages:** Python, C/C++, C#, Swift, JavaScript, HTML/CSS.
- Technologies:** PyTorch, TensorFlow, OpenCV, Google Firebase, AWS, Unity, NodeJS, Git, L^AT_EX.
- Languages:** English (*fluent*), Vietnamese (*native*).

SELECTED PUBLICATIONS

List of publications on [Google Scholar](#).

Under Submission

1. **Trung-Hieu Hoang**, Duc Minh Vo, Minh N. Do. RIP: A Simple Black-box Attack on Continual Test-time Adaptation. *Under submission, 2024.*

Conference Publications

1. **Trung-Hieu Hoang**, Duc Minh Vo, Minh N. Do. Persistent Test-time Adaptation in Recurring Testing Scenario. *The 38th Annual Conference on Neural Information Processing Systems (NeurIPS), 2024.*
2. Zilinghan Li, Shilan He, Pranshu Chaturvedi, **Trung-Hieu Hoang** et al. APPFLx: Providing Privacy-Preserving Cross-Silo Federated Learning as a Service. *IEEE 19th International Conference on e-Science (e-Science), 2023.*
3. **Trung-Hieu Hoang**, Hai-Dang Nguyen, Viet-Anh Nguyen, Thanh-An Nguyen, Vinh-Tiep Nguyen, Minh-Triet Tran. Enhancing Endoscopic Image Classification with Symptom Localization and Data Augmentation. *Proceedings of ACM Multimedia, 2019.*
4. **Trung-Hieu Hoang**, Mai-Khiem Tran, Vinh-Tiep Nguyen, Minh-Triet Tran. Solving Life Puzzle with Visual Context-based Clustering and Habit Reference. *ImageCLEF - Multimedia Retrieval in CLEF 2019.*

Journal Publications

1. **Trung-Hieu Hoang**, Jordan Fuhrman et al.. Enabling End-to-End Secure Federated Learning in Biomedical Research on Heterogeneous Computing Environments with APPFLx. *Computational and Structural Biotechnology Journal (CSBJ), 2024.*
2. **Trung-Hieu Hoang**, Christopher Zallek, Minh N. Do. Smartphone-Based Digitized Neurological Examination Toolbox for Multi-test Neurological Abnormality Detection and Documentation. *IEEE Journal of Biomedical and Health Informatics (JBHI), 2024.*
3. Jongwon Lim, Katherine Koprowski, Robert Stavins, Nhat Xuan, **Trung-Hieu Hoang** et al. Point-of-Care Multiplex Detection of Respiratory Viruses. *ACS Sensors, 2024.*
4. **Trung-Hieu Hoang*** and Mona Zehni*, Huaijin Xu, George Heintz, Christopher Zallek, Minh N. Do. Towards a Comprehensive Solution for a Vision-based Digitized Neurological Examination. *IEEE Journal of Biomedical and Health Informatics (JBHI), 2022.*
5. Aaron M. Jankelow*, Hankeun Lee*, Weijing Wang*, **Trung-Hieu Hoang***, et al. Smartphone Clip-On Instrument and Microfluidic Processor for Rapid Sample-to-Answer Detection of Zika Virus in Whole Blood Using Spatial RT-LAMP. *Analyst, 2022.*

Workshop Publications

1. **Trung-Hieu Hoang**, Huy Phan, Mona Zehni, Duc Minh Vo, Minh N. Do. Improving the Robustness of 3D Human Pose Estimation: A Benchmark and Learning from Noisy Input. *Proceedings of the IEEE/CVF CVPR Workshops on Fair, Data-Efficient, and Trusted Computer Vision, 2024.*
2. Minh-Triet Tran, Tam V Nguyen, **Trung-Hieu Hoang** et al. iTASK-Intelligent Traffic Analysis Software Kit. *Proceedings of the IEEE/CVF CVPR Workshops, 2020.*
3. Minh-Triet Tran, **Trung-Hieu Hoang** et al. Multi-Referenced Guided Instance Segmentation Framework for Semi-supervised Video Instance Segmentation. *Proceedings of the CVPR Workshops, 2020.*
4. Khac-Tuan Nguyen, **Trung-Hieu Hoang** et al. Vehicle Re-identification with Learned Representation and Spatial Verification and Abnormality Detection with Multi-Adaptive Vehicle Detectors for Traffic Video Analysis. *Proceedings of the IEEE/CVF CVPR Workshops, 2019.*
5. Minh-Triet Tran, Trung-Nghia Le, Tam V. Nguyen, That-Vinh Ton, **Trung-Hieu Hoang**, et al. Guided Instance Segmentation Framework for Semi-supervised Video Instance Segmentation. *Proceedings of the IEEE/CVF CVPR Workshops, 2019.*
6. Nguyen-Khang Le, Dieu-Hien Nguyen, **Trung-Hieu Hoang** et al. Smart lifelog retrieval system with habit-based concepts and moment visualization. *Lifelog Search Challenge (LSC), 2019.*

BOOK CHAPTER

1. Hai-Quan Vu, Xuan-Nam Cao, Trung-Hieu Hoang, Hai-Trieu Nguyen, Chi-Tai Vong. “Introduction to Python Programming” (in Vietnamese). *Vietnam National University in Ho Chi Minh City, 2019.*

PRESENTATIONS

1. Smartphone-based Digitized Neurological Examination Toolbox for Multitest Neurological Abnormality Detection and Documentation (**Oral**). *American Society of Biomechanics (ASB) Annual Meeting. 2024*

*Equally contributed.

2. Persistent Test-time Adaptation in Recurring Testing Scenario. *The 1st Workshop on Test-Time Adaptation: Model, Adapt Thyself! (MAT), IEEE/CVF Conference on Computer Vision and Pattern Recognition.* 2024

PROFESSIONAL SERVICES

- Organizer of the ACM MM 2025 Workshop and Grand Challenge on Large Vision – Language Model Learning and Applications (LAVA) in Dublin, Ireland. 2025
- Reviewer: NeurIPS, CVPR, ICCV, AAAI, npj Digital Medicine, IEEE Journal of Biomedical and Health Informatics (IEEE-JBHI), IEEE Transactions on Vehicular Technology.

TEACHING EXPERIENCE

- Lecturer*, Advanced Computer Vision (*online course*) (VietAI - 2023, 2024, 2025)
- Teaching assistant (TA)*, ECE 310 - Digital Signal Processing (UIUC - Fall 2022)
- TA, and lab instructor*, CECS1020 - Introduction to Machine Learning (VinUniversity - Spring 2021)

RELEVANT COURSES

- ECE 513 - Vector Space Signal Processing[†]** by Prof. Minh N. Do (UIUC - Spring 2024)
- ECE 563 - Information Theory** by Prof. Ilan Shomorony (UIUC - Fall 2023)
- ME 481 - Whole-Body Musculoskeletal Biomechanic[†]** by Prof. Mariana E. Kersh (UIUC - Spring 2023)
- ECE 543 - Statistical Learning Theory[†]** by Prof. Dimitrios Katselis (UIUC - Spring 2023)
- ECE 566 - Computational Inference and Learning** by Prof. Pierre Moulin (UIUC - Fall 2022)
- ECE 416 - Biosensors[†]** by Prof. Brian T. Cunningham (UIUC - Spring 2022)
- ECE 551 - Digital Signal Processing II[†]** by Prof. Zhi-Pei Liang (UIUC - Fall 2021)
- ECE 534 - Random Processes[†]** by Prof. Dimitrios Katselis (UIUC - Fall 2021)
- CS547 - Deep Learning[†]** by Prof. Richard Sowers (UIUC - Spring 2021)
- ECE 549 - Computer Vision[†]** by Prof. Saurabh Gupta (UIUC - Spring 2021)
- ECE 490 - Introduction to Optimization** by Prof. Venugopal V. Veeravalli (UIUC - Fall 2020)
- ECE 449 - Machine Learning** by Prof. Sanmi Koyejo (UIUC - Fall 2020)

HONORS AND AWARDS

- Recipient of the Dan Vivoli Endowed Fellowship 2025
- Best Presentation Award (Machine Learning and Signal Processing session), CSL Student Conference 2025
- Recipient of the Qualcomm Graduate Award 2025
- Recipient of the Coordinated Science Laboratory (CSL)-InstaRecon Innovation Scholarship 2024
- Best Paper Award (the community track) of the 1st Workshop on Test-Time Adaptation: Model, Adapt Thyself! (MAT), Conference on Computer Vision and Pattern Recognition (CVPR) 2024 2024
- 2nd place poster contest - Illinois AI and Health Summit: Healthy Aging of Brain and Mind with AI 2024
- Recipient of the Mavis Future Faculty Fellowship, Grainger College of Engineering, UIUC 2023
- Asia regional winner in Computer Science field – The Global Undergraduate Awards 2020
- Recommended candidate by VEF 2.0 Program 2020
- 4th place winner - the semi-supervised track, DAVIS Challenge 2020, CVPR 2020 2020
- Recipient of the Ho Chi Minh City Outstanding Young Citizen Award 2019
- 1st place winner – the 21st Eureka - Vietnam National Student Scientific Research Competition 2019
- 3rd place winner - the Semi-supervised track, DAVIS Challenge 2019, CVPR 2019 2019
- Recipient of the Ho Chi Minh City Information and Communication Technology Award 2018
- 1st place winner in Makerthon 2018 (a national hackathon competition for university students) 2018
- 3rd prize in the physics and astronomy field, Viet Nam National Student Science and Engineering Fair 2015
- 2nd prize in the computer science field, Viet Nam National Student Science and Engineering Fair 2014
- Silver medals in computer science subject, the April 30th Traditional Olympiad 2014 – 2015

INTERNATIONAL EXCHANGE PROGRAM

- 14th Enterprise Summer Programme, National University of Singapore, Singapore 2019
- ASEAN – India International Exchange program, India 2018
- 2018 Asia-Pacific Youth Forum on Digital Innovation and Entrepreneurship, Taipei 2018
- Spring School Programme 2017, Chiba University and ASEAN University Network, Japan 2017

REFERENCE

- Prof. Minh N. Do**, Department of Electrical and Computer Engineering - University of Illinois at Urbana-Champaign (UIUC), USA minhdo@illinois.edu
- Prof. Minh-Triet Tran**, Vice President, Head of Software Engineering Lab, Deputy Head of Artificial Intelligence Lab – University of Science, VNU-HCM, Vietnam tmtriet@hcmus.edu.vn

[†]Obtained A+ for excellent performance.