

## EDUCATION

**Electrical and Computer Engineering, University of Illinois at Urbana-Champaign (UIUC)** Illinois, USA

*Ph.D. Candidate (Expected day of graduation: 05/2026)*

*6/2020-present*

- **Research interest:** computer vision and machine learning, image and signal processing, AI in 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

*Bachelor of Science, Honor Program*

*2015-2019*

- **GPA:** 9.25/10.0 (Top 2/600 - Degree class: *Excellent*).
- **Academic advisor :** Prof. Minh-Triet Tran.

## WORK EXPERIENCE

**Google Research**

California, USA

*Research Intern at Health AI Team*

*5/2025-8/2025*

- **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

*Student Intern at Mobile Processor Innovation (MPI) Lab*

*6/2024-9/2024*

- **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

*Student Intern at Human Motion Analysis Laboratory*

*6/2023-9/2023*

- **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

*Student Intern at Data Science Learning (DSL) Division*

*6/2022-9/2022*

- **Description:** Enhancing the capabilities of APPFLX: *Argonne Privacy-Preserving Federated Learning 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

*Student Intern at Computational Imaging Group (CIG)*

*9/2019-11/2019*

- **Description:** Developing the *Digitized Neurological Examination* 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

*Teaching Assistant and Lab Instructor*

*1/2021-5/2021*

**Software Engineering Laboratory, University of Science, VNU-HCM**

Ho Chi Minh City, Vietnam

*Research Assistant at Multimedia and Human Computer Interaction Group*

*8/2018-9/2019*

- **Description:** Developing a *computer-aided diagnostic system* to help physicians detect abnormalities and key anatomical landmarks in the gastrointestinal tract from endoscopic images. Participating in AI/ML challenges: *AI City challenge*, *Video Instance Segmentation – the DAVIS challenge*, and *Visual Life-logging*.
- **Advisor:** Prof. Minh-Triet Tran.

## SKILLS

1. **Programming languages:** Python, C/C++, C#, Swift, JavaScript, HTML/CSS.
2. **Technologies:** PyTorch, TensorFlow, OpenCV, Google Firebase, AWS, Unity, NodeJS, Git,  $\LaTeX$ .
3. **Languages:** English (*fluent*), Vietnamese (*native*).

## SELECTED PUBLICATIONS

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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 38<sup>th</sup> 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. **Trung-Hieu Hoang\***, Aaron M. Jankelow\*, Hankeun Lee\*, Weijing Wang\* *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

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\*Equally contributed.

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

## PROFESSIONAL SERVICES

1. Organizer of the ACM MM 2025 Workshop and Grand Challenge on Large Vision – Language Model Learning and Applications (LAVA) workshop. 2025
2. Reviewer: NeurIPS, CVPR, ICCV, AAI, 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<sup>†</sup>** by Prof. Minh N. Do (UIUC - Spring 2024)
- **ECE 563 - Information Theory** by Prof. Ilan Shomorony (UIUC - Fall 2023)
- **ME 481 - Whole-Body Musculoskel Biomechanic<sup>†</sup>** by Prof. Mariana E. Kersh (UIUC - Spring 2023)
- **ECE 543 - Statistical Learning Theory<sup>†</sup>** by Prof. Dimitrios Katselis (UIUC - Spring 2023)
- **ECE 566 - Computational Inference and Learning** by Prof. Pierre Moulin (UIUC - Fall 2022)
- **ECE 416 - Biosensors<sup>†</sup>** by Prof. Brian T. Cunningham (UIUC - Spring 2022)
- **ECE 551 - Digital Signal Processing II<sup>†</sup>** by Prof. Zhi-Pei Liang (UIUC - Fall 2021)
- **ECE 534 - Random Processes<sup>†</sup>** by Prof. Dimitrios Katselis (UIUC - Fall 2021)
- **CS547 - Deep Learning<sup>†</sup>** by Prof. Richard Sowers (UIUC - Spring 2021)
- **ECE 549 - Computer Vision<sup>†</sup>** 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 1<sup>st</sup> Workshop on Test-Time Adaptation: Model, Adapt Thyself! (MAT), Conference on Computer Vision and Pattern Recognition (CVPR) 2024 2024
- 2<sup>nd</sup> 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
- 4<sup>th</sup> place winner - the semi-supervised track, DAVIS Challenge 2020, CVPR 2020 2020
- Recipient of the Ho Chi Minh City Outstanding Young Citizen Award 2019
- 1<sup>st</sup> place winner – the 21<sup>st</sup> *Eureka* - Vietnam National Student Scientific Research Competition 2019
- 3<sup>rd</sup> 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
- 1<sup>st</sup> place winner in Makerthon 2018 (a national hackathon competition for university students) 2018
- 3<sup>rd</sup> prize in the physics and astronomy field, Viet Nam National Student Science and Engineering Fair 2015
- 2<sup>nd</sup> prize in the computer science field, Viet Nam National Student Science and Engineering Fair 2014
- Silver medals in computer science subject, the April 30<sup>th</sup> Traditional Olympiad 2014 – 2015

## INTERNATIONAL EXCHANGE PROGRAM

- 14<sup>th</sup> 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

1. **Prof. Minh N. Do**, Department of Electrical and Computer Engineering - University of Illinois at Urbana-Champaign (UIUC), USA *minhdo@illinois.edu*
2. **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*

<sup>†</sup>Obtained A+ for excellent performance.