Hieu Le

UNC-Charlotte
Charlotte, NC 28223, USA

https://hieulem.github.io/
hle40@charlotte.edu

CURRENT POSITION

Assistant Professor. UNC-Charlotte, NC, USA
Computer Science Department.
Aug 2025 – Now

PREVIOUS ACADEMIC POSITIONS

Postdoctoral Researcher. EPFL, Lausanne, Switzerland
Jan 2023 – Aug 2025
Advisor : Pascal Fua
- Generative Modeling for image and 3D shape generation, focusing on explainability and reliability.
- 3D modeling techniques for unsigned distance fields, human organ shape reconstruction, and scene understanding.
- Uncertainty estimation methods for 3D shape optimization and image segmentation.

Research Assistant. Stony Brook University, New York, USA
Aug 2014 – Dec 2020
Advisor : Dimitris Samaras
- Physics-based methods in computer vision, focusing on shadow detection and removal by integrating illumination constraints into deep learning.
- Remote sensing image segmentation and understanding, automating the interpretation of environmental and geographical data into deep learning framework.
- Clustering methods for image and video segmentation.

Visiting Researcher. Ecole Centrale de Lyon, Lyon, France
Jun 2019 – Sep 2019
- Generative modeling techniques for image retrieval systems.

Research Assistant. Pohang University of Science and Technology, Pohang, Korea
Jun 2012 – Sep 2012
- Handwritten digit recognition using deep learning.

INDUSTRY EXPERIENCE

Applied Scientist. Amazon Robotics, Boston, MA
Jan 2021 – Dec 2022
- Designed and implemented scalable, real-time machine learning solutions for recognition systems in automated warehouse operations.

Research Intern. Amazon Robotics, Boston, MA
Jun 2020 – Sep 2020
- Developed advanced depth-aware, real-time object detection algorithms utilizing liquid lens technology to enhance performance in dynamic environments.

Research Intern. AIG Science, New York, NY
May 2017 – Sep 2017
- Created deep learning models for automated damage assessment in insurance-related datasets, focusing on robustness and scalability.

EDUCATION

Ph.D. in Computer Science, Stony Brook University, Stony Brook, NY
Aug 2014 – Dec 2020
Advisor: Prof. Dimitris Samaras

Thesis: Incorporating Physical Illumination Constraints into Deep Learning Shadow Detection and Removal

B.Sc. in Computer Science, Honors Program, University of Science, Ho Chi Minh City, Vietnam
Aug 2008 – May 2012
Thesis: USB Interface in embedded systems for Radio Frequency Identification.

TEACHING EXPERIENCE

- **Lecturer**, UNC-Charlotte, NC (2025–now): Introduction to Machine Learning.
- **Teaching Assistant**, Stony Brook University, NY (2015–2020): Computer Vision, Data Structures, Foundations of Computer Science, Computer Graphics, Discrete Math.
- **Guest Lecturer**, SBU (2019): "Discrete Math" (graduate level).

AWARDS AND HONORS

Travel Grant and Fellowship: DAAD 2024
Best Reviewer Awards: ACCV 2022
Best Reviewer Awards: CVPR 2021
Best Reviewer Awards: ECCV 2020
Travel Grant: Microsoft AI4Earth 2019
Fellowship: Vietnam Education Foundation 2014
Research Grant: Vietnam NAFOSTED 2013
Silver Medal: Vietnam National Informatics Olympiad 2007

PROFESSIONAL SERVICES

Journal reviewer: IEEE Transactions on Pattern Analysis and Machine Intelligence, International Journal of Computer Vision, IEEE Transactions on Image Processing, Journal of Photogrammetry and Remote Sensing, Computer Vision and Image Understanding.
Conference reviewer: CVPR (2018–Now), ECCV (2020–Now), ICCV (2019–Now), ACCV (2020–Now), WACV (2020–Now), AAAI (2020–Now), ICLR (2021–Now), NeurIPS (2021–Now).
Guest Editor: Bioengineering - Special issue "Advances in Medical 3D Vision: Voxels and Beyond"

PUBLICATIONS - https://scholar.google.com/citations?hl=en&user=Bj9g-EEAAAAJ

1. N. Talabot, O. Clerc, A. Demirtas, **H. Le**, D. Oner, P. Fua, "PartSDF: Part-Based Implicit Neural Representation for Composite 3D Shape," ***TMLR 2025***.

2. F. Stella, N. Talabot, **H. Le**, P. Fua, "High Resolution UDF Meshing via Iterative Networks," ***NeurIPS 2025***.

3. H. Wu, J. Xu, **H. Le**, D. Samaras, "Importance-based Token Merging for Efficient Image and Video Generation," ***ICCV 2025*** *- Oral (Acceptance rate 0.5%)*.

4. C. Dumery, N. Ette, A. Fan, R. Li, J. Xu, **H. Le**, P. Fua, "Counting Stacked Objects," ***ICCV 2025****- Oral (Acceptance rate 0.5%)*.

5. **H. Le**, J. Xu, N. Talabot, J. Yang, P. Fua, "Pairwise-Constrained Implicit Functions for 3D Human Heart Modeling," ***MICCAI 2025*** *- Early Accept (Acceptance rate 9%)*.

6. S. Javed, **H. Le**, M. Salzmann, "QT-DoG: Quantization-Aware Training for Domain Generalization," ***ICML 2025***.

7. S. Li, **H. Le**, J. Xu, M. Salzmann, "Enhancing Compositional Text-to-Image Generation with Reliable Random Seeds," ***ICLR 2025*** *- Spotlight (Acceptance rate 5%)*.

8. J. Xu, **H. Le**, D. Samaras, "Learning to Count from Pseudo-Labeled Segmentation," ***WACV 2025***.

9. S. Hu, **H. Le**, S. Athar, S. Das, D. Samaras, "Shadow Removal Refinement via Material-Consistent Shadow Edges," ***WACV 2025***.

10. J. Xu, **H. Le**, D. Samaras, "Assessing Sample Quality via the Latent Space of Generative Models," ***ECCV 2024***.

11. F. Stella, N. Talabot, **H. Le**, P. Fua, "Neural Surface Localization for Unsigned Distance Fields," ***ECCV 2024***.

12. P. Howlader, **H. Le**, D. Samaras, "Weighting Pseudo-Labels via High-Activation Feature Index Similarity and Object Detection for Semi-Supervised Segmentation," ***ECCV 2024***.

13. P. Howlader, S. Das, **H. Le**, D. Samaras, "Beyond Pixels: Semi-Supervised Semantic Segmentation with a Multi-scale Patch-based Multi-Label Classifier," ***ECCV 2024***.

14. S. Li, C. Liu, T. Zhang, **H. Le**, S. Süsstrunk, M. Salzmann, "Controlling the Fidelity and Diversity of Deep Generative Models via Pseudo Density," ***TMLR 2024***.

15. J. Yang, E. Sedykh, J. Adhinarta, **H. Le**, P. Fua, "Generating Anatomically Accurate Heart Structures via Neural Implicit Fields," ***MICCAI 2024***.

16. N. Durasov, D. Oner, J. Donier, **H. Le**, P. Fua, "Enabling Uncertainty Estimation in Iterative Neural Networks," ***ICML 2024***.

17. N. Durasov, N. Dorndorf, **H. Le**, P. Fua, "Zigzag: Universal Sampling-free Uncertainty Estimation Through Two-Step Inference," ***TMLR 2024***.

18. A. Bui, **H. Le**, T. Hoang, G. Trinh, H.C. Shao, P. Tsai, K. Chen, K. Hsieh, E. Huang, C. Hsu, M. Mathew, C. Lee, P. Wang, T. Huan, M. Wu, "Development of End-to-End Artificial Intelligence Models for Surgical Planning in Transforaminal Lumbar Interbody Fusion," ***Bioengineering 2024.***

19. J. Xu, **H. Le**, V. Nguyen, V. Ranjan, D. Samaras, "Zero-Shot Object Counting," ***CVPR 2023***.

20. J. Xu, **H. Le**, D. Samaras, "Generating features with increased crop-related diversity for few-shot object detection," ***CVPR 2023***.

21. J. Xu, **H. Le**, "Generating ReNowative Samples for Few-shot Classification," ***CVPR 2022***.

22. **H. Le**, D. Samaras, "Physics-based Shadow Image Decomposition for Shadow Removal," ***TPAMI 2023***.

23. **H. Le**, D. Samaras, H.J. Lynch, "A Convolutional Neural Network Architecture Designed for the Automated Survey of Seabird Colonies," ***Remote Sensing 2022***.

24. J. Xu, **H. Le**, M. Huang, S. Athar, D. Samaras, "Variational Feature Disentangling for Fine-Grained Few-Shot Classification," ***ICCV 2021***.

25. **H. Le**, D. Samaras, "From Shadow Segmentation to Shadow Removal," ***ECCV 2020***.

26. **H. Le**, D. Samaras, "Shadow Removal via Shadow Image Decomposition," ***ICCV 2019***.

27. **H. Le**, B. Gonçalves, D. Samaras, H. Lynch, "Weakly Labeling the Antarctic: The Penguin Colony Case," ***CVPRW 2019***.

28. **H. Le**, T.F.Y. Vicente, V. Nguyen, M. Hoai, D. Samaras, "A+D Net: Training a Shadow Detector with Adversarial Shadow Attenuation," ***ECCV 2018***.

29. V. Ranjan, **H. Le**, M. Hoai, "Iterative Crowd Counting," ***ECCV 2018***.

30. **H. Le**, C.-P. Yu, G. Zelinsky, D. Samaras, "Co-localization with Category-Consistent CNN Features and Geodesic Distance Propagation," ***ICCV 2017***.

31. **H. Le**, V. Nguyen, C.-P. Yu, D. Samaras, "Geodesic Distance Histogram Feature for Video Segmentation," ***ACCV 2016***.

32. C.-P. Yu, **H. Le**, G. Zelinsky, D. Samaras, "Efficient Video Segmentation Using Parametric Graph Partitioning," ***ICCV 2015***.