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. POSTECH, 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

- **Instructor**, UNC-Charlotte, NC:
  Fall 2025 – Spring 2026: Introduction to Machine Learning;
  Fall 2026 – now: Introduction to Computer Vision.
- **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`

Journals

1. "Translational Deep Learning Models for Risk Stratification to Predict Prognosis and Immunotherapy Response in Gastric Cancer Using Digital Pathology." Mai Hanh Nguyen, Huy-Hoang Do-Huu*, Phuc-Tan Nguyen*, Ngoc Dung Tran, Thuy Linh Nguyen, **Hieu Le**, Nguyen Quoc Khanh Le. ***Journal of Translational Medicine 2025***.
2. "PartSDF: Part-Based Implicit Neural Representation for Composite 3D Shape." Nicolas Talabot, Olivier Clerc, Arda Cinar Demirtas, **Hieu Le**, Doruk Oner, Pascal Fua. ***TMLR 2025***.
3. "Controlling the Fidelity and Diversity of Deep Generative Models via Pseudo Density." Shuangqi Li, Chen Liu, Tong Zhang, **Hieu Le**, Sabine Süsstrunk, Mathieu Salzmann. ***TMLR 2024***.
4. "Zigzag: Universal Sampling-free Uncertainty Estimation Through Two-Step Inference." Nikita Durasov, Nik Dorndorf, **Hieu Le**, Pascal Fua. ***TMLR 2024***.
5. "Development of End-to-End Artificial Intelligence Models for Surgical Planning in Transforaminal Lumbar Interbody Fusion." Anh Bui, **Hieu Le**, Tuan Hoang, Giang Trinh, Hsin-Chun Shao, Po-Liang Tsai, Kuang-Chien Chen, Kai-Hsiang Hsieh, Eric Huang, Chien-Hung Hsu, Mathew Mathew, Chien-Hsiang Lee, Po-Liang Wang, Tzu-Hsuan Huan, Ming-Cheng Wu. ***Bioengineering 2024***.
6. "Physics-based Shadow Image Decomposition for Shadow Removal." **Hieu Le**, Dimitris Samaras. ***TPAMI 2022***.
7. "A convolutional neural network architecture designed for the automated survey of seabird colonies." **Hieu Le**, Dimitris Samaras, Heather J. ***Remote Sensing in Ecology and Conservation 2022***.
8. "Aerial-trained deep learning networks for surveying cetaceans from satellite imagery." Alex Borowicz, **Hieu Le**, Grant Humphries, Georg Nehls, Caroline Hoschle, Vladislav Kosarev, Heather J Lynch. ***Plos One 2019***.

Conferences

1. "MS-Temba: Multi-Scale Temporal Mamba for Understanding Long Untrimmed Videos." Arkaprava Sinha, Monish Soundar Raj, Pu Wang, Ahmed Helmy, **Hieu Le**, Srijan Das. ***CVPR 2026***.
2. "Personalized Image Descriptions from Attention Sequences." Ruoyu Xue, **Hieu Le**, Jingyi Xu, Sounak Mondal, Abe Leite, Gregory Zelinsky, Minh Hoai, Dimitris Samaras. ***CVPR 2026***.
3. "Learning to Weight Parameters for Data Attribution." Shuangqi Li, **Hieu Le**, Jingyi Xu, Mathieu Salzmann. ***ICLR 2026***.
4. "CORA: Consistency-Guided Semi-Supervised Framework for Reasoning Segmentation." Prantik Howlader, Hoang Nguyen-Canh, Srijan Das, Jingyi Xu, **Hieu Le**, Dimitris Samaras. ***WACV 2026***.
5. "High Resolution UDF Meshing via Iterative Networks." Federico Stella, Nicolas Talabot, **Hieu Le**, Pascal Fua. ***NeurIPS 2025***.
6. "Importance-based Token Merging for Efficient Image and Video Generation." Haoyu Wu, Jingyi Xu, Dimitris Samaras*, **Hieu Le***. ***ICCV 2025 – Oral (0.5%)***.
7. "Counting Stacked Objects." Corentin Dumery, Noa Ette, Aoxiang Fan, Ren Li, Jingyi Xu, **Hieu Le**, Pascal Fua. ***ICCV 2025 – Oral (0.5%)***.
8. "Pairwise-Constrained Implicit Functions for 3D Human Heart Modeling." **Hieu Le**, Jingyi Xu, Nicolas Talabot, Jiancheng Yang, Pascal Fua. ***MICCAI 2025 – Early Accept (9%)***.
9. "QT-DoG: Quantization-Aware Training for Domain Generalization." Saqib Javed, **Hieu Le**, Mathieu Salzmann. ***ICML 2025***.
10. "Few-shot Personalized Scanpath Prediction." Ruoyu Xue, Jingyi Xu, Sounak Mondal, **Hieu Le**, Greg Zelinsky, Minh Hoai, Dimitris Samaras. ***CVPR 2025***.
11. "Enhancing Compositional Text-to-Image Generation with Reliable Random Seeds." Shuangqi Li, **Hieu Le**, Jingyi Xu, Mathieu Salzmann. ***ICLR 2025 – Spotlight (5%)***.
12. "Learning to Count from Pseudo-Labeled Segmentation." Jingyi Xu, **Hieu Le**, Dimitris Samaras. ***WACV 2025***.
13. "Shadow Removal Refinement via Material-Consistent Shadow Edges." Shilin Hu, **Hieu Le**, ShahRukh Athar, Sagnik Das, Dimitris Samaras. ***WACV 2025***.
14. "Assessing Sample Quality via the Latent Space of Generative Models." Jingyi Xu, **Hieu Le**, Dimitris Samaras. ***ECCV 2024***.
15. "Neural Surface Localization for Unsigned Distance Fields." Federico Stella, Nicolas Talabot, **Hieu Le**, Pascal Fua. ***ECCV 2024***.
16. "Weighting Pseudo-Labels via High-Activation Feature Index Similarity and Object Detection for Semi-Supervised Segmentation." Prantik Howlader, **Hieu Le**, Dimitris Samaras. ***ECCV 2024***.
17. "Beyond Pixels: Semi-Supervised Semantic Segmentation with a Multi-scale Patch-based Multi-Label Classifier." Prantik Howlader, Srijan Das, **Hieu Le**, Dimitris Samaras. ***ECCV 2024***.
18. "Generating Anatomically Accurate Heart Structures via Neural Implicit Fields." Jiancheng Yang, Ekaterina Sedykh, Jason Adhinarta, **Hieu Le**, Pascal Fua. ***MICCAI 2024***.
19. "Enabling Uncertainty Estimation in Iterative Neural Networks." Nikita Durasov, Doruk Oner, Jonathan Donier, **Hieu Le**, Pascal Fua. ***ICML 2024***.
20. "Zero-Shot Object Counting." Jingyi Xu, **Hieu Le**, Vu Nguyen, Viresh Ranjan, Dimitris Samaras. ***CVPR 2023***.
21. "Generating Features With Increased Crop-related Diversity For Few-shot Object Detection." Jingyi Xu, **Hieu Le**, Dimitris Samaras. ***CVPR 2023***.
22. "Generating Representative Samples for Few-Shot Classification." Jingyi Xu, **Hieu Le**. ***CVPR 2022***.
23. "Variational Feature Disentangling for Fine-Grained Few-Shot Classification." Jingyi Xu, **Hieu Le**, Mingzhen Huang, ShahRukh Athar, Dimitris Samaras. ***ICCV 2021***.
24. "From Shadow Segmentation to Shadow Removal." **Hieu Le**, Dimitris Samaras. ***ECCV 2020***.
25. "Shadow Removal via Shadow Image Decomposition." **Hieu Le**, Dimitris Samaras. ***ICCV 2019***.

26. "A+D Net: Training a Shadow Detector with Adversarial Shadow Attenuation." **Hieu Le**, Tomas F. Yago Vicente, Vu Nguyen, Minh Hoai, Dimitris Samaras. ***ECCV 2018***.
27. "Iterative Crowd Counting." Viresh Ranjan, **Hieu Le**, Minh Hoai. ***ECCV 2018***.
28. "Geodesic Distance Histogram Feature for Video Segmentation." **Hieu Le**, Vu Nguyen, Chen-Ping Yu, Dimitris Samaras. ***ACCV 2016***.
29. "Efficient video segmentation using parametric graph partitioning." Chen-Ping Yu, **Hieu Le**, Gregory Zelinsky, Dimitris Samaras. ***ICCV 2015***.

Workshops/Abstracts

1. "Phrase-Instance Alignment for Generalized Referring Segmentation." E-Ro Nguyen, **Hieu Le**, Dimitris Samaras, Michael Ryoo. ***CVPRW 2026***.
2. "Gradient Distance Function." **Hieu Le**, Federico Stella, Benoit Guillard, Pascal Fua. ***ICCV 2025 – Wild3D Workshop***.
3. "Weakly Labeling the Antarctic: The Penguin Colony Case." **Hieu Le**, Bento Gonçalves, Dimitris Samaras, Heather Lynch. ***CVPRW 2019***.
4. "Co-localization with Category-Consistent CNN Features and Geodesic Distance Propagation." **Hieu Le**, Chen-Ping Yu, Gregory Zelinsky, Dimitris Samaras. ***ICCVW 2017***.