

Hoàng-Ân Lê, PhD

Personal Information

Current position:	Postdoctoral Researcher	Contact:	hoang-an.le@univ-ubs.fr
Research interest:	Computer Vision topics using advanced Machine Learning algorithms, including but not limited to multi-modalities, multi-task learning, self-supervised learning for various problems such as scene understanding, generative models, and particularly Earth Observation.		

Education

2016–2021 Doctor of Philosophy in Computer Science

University of Amsterdam, the Netherlands

Computer Vision lab, Informatics Institute, Faculty of Science

- funded by the TrimBot2020 project, EU Horizon program
- **Advisors** Prof. Theo Gevers and A/Prof. Thomas Mensink
- **Dissertation** “Outdoor Image Understanding from Multiple Vision Modalities”

2012–2015 Master of Science in Engineering

Diplôme d’Ingénieur, Télécom ParisTech, France

- international program, all classes in English

2012–2013 *John von Neumann institute, Vietnam National University, Vietnam*

2013–2015 *EURECOM institute, Campus SophiaTech, Télécom ParisTech, France*

- **GPA** 4.00/4.00 | **Eiffel scholarship** by Campus France
- **Semester project** “Person-based Video Hyperlinking” | **Advisor** A/Prof. Benoît Huet
- **Graduation project** “Multi-Camera Matching and Point Clouds Registration for 3D Immersive Visual Systems” | **Advisor** Prof. Minh Do, UIUC, USA

2008–2012 Bachelor of Science

University of Science, Vietnam National University, Ho Chi Minh city, Vietnam

Advanced Program in Computer Science (APCS), all classes in English

- **GPA** 3.96/4.00
- **Graduation project** “Natural User Interface for Smart Environment” | **Advisor** A/Prof. Minh-Triet Tran

Projects

Feb 2024–presence Multi-Task Learning for Super-Resolution and Semantic Segmentation

Postdoctoral researcher—*Centre National d’Études Spatiales (CNES), Toulouse, France*

- in collaboration with IRISA institute, University South Brittany

Supervisors Dr. Solange Lemaï-Chenevier, A/Prof. Minh-Tan Pham

Topic Leveraging self-supervised and multi-task learning for super-resolution and semantic segmentation

Feb 2022–Jan 2024 Robust Multitask Learning via Mutual Knowledge Distillation for Earth Observation

Postdoctoral researcher—*University of South Brittany, Vannes, France*

- OBELIX team—IRISA institute

Supervisor A/Prof. Minh-Tan Pham

Topic Multitask Learning with Contrastive Learning

Jan 2021–Nov 2021 Offshore Wind Farm Surveys Of Marine Megafauna

Postdoctoral researcher—*France Énergies Marines, Brest, France*

- in collaboration with IRISA institute, University South Brittany

Supervisors Dr. Karine Heerah, Prof. Sébastien Lefèvre

Topic Deep learning based Multimodal Analysis

Oct 2020–Dec 2020	Positive Plant-Plant interaction and spatial Patterns in Pyrenean Post-mine tailings
	Visiting researcher— <i>University of South Brittany</i> , Vannes, France • OBELIX team, IRISA institute Supervisor Prof. Sébastien Lefèvre Topic Digital Terrain Model extraction
Apr 2016–Dec 2019	TrimBot2020 funded by the EU Horizon2020 program
	Doctoral researcher— <i>University of Amsterdam</i> , Amsterdam, the Netherlands • Computer Vision lab, Informatics Institute Supervisor Prof. Theo Gevers Topic vision-based 3D data analysis and scene understanding work-package.
Mar 2015–Sep 2015	Obiwan project: 3D Immersive Visual System
	Master intern— <i>University of Illinois at Urbana-Champaign</i> , USA • CSL and Personify Inc. Supervisors Prof. Minh Do and Prof. Sanjay Patel Topic study and implement a 3D immersive system using Intel RealSense R200 and Oculus Rift DK2.
Jun 2014–Sep 2014	LinkedTV project: Multimedia and Video retrieval
	Master intern— <i>EURECOM institute</i> , Sophia Antipolis, France • Multimedia track Supervisor Prof. Benoît Huet Topic search and hyperlinking task for MediaEval 2014

Academic Experiences

Communities

Since 2018 regular reviewer for CVPR, ICCV, ECCV, BMVC, WACV conferences.

- 2025**
- area-chair (meta-reviewer) for WACV.
 - co-organizer of the 4th edition of AI4EO Symposium (Rennes, France)

Supervision

- 2024** Anh-Kiet Duong, *Université de Limoges*, co-supervision with M.-T. Pham
- Two papers accepted for GRSL and IGARSS
 - **Topic** Towards Privacy-Preserving Federated Learning Across Multiple Datasets
- 2021** Wei-Hsin Tseng, *MCDE, Université Bretagne Sud*, co-supervision with S. Lefèvre, A. Boulch, and D. Tied
- One paper accepted for ISPRS conference
 - **Topic** Contrastive Learning for Localizing Elevation Data

Teaching Assistance

University of Amsterdam, the Netherlands

- 2016–2020 Computer Vision 1
 2016–2017 Computer Vision 2
Lecturer Prof. Theo Gevers

Publications

Journals

- [J5] AK. Duong, T.V. La, H.-Â. Lê, M.T. Pham, “FedShip: Federated Learning for Ship Detection from Multi-Source Satellite Images”, under submission to *IEEE Geoscience and Remote Sensing Letters* (GRSL), 2024
- [J4] H.-Â. Lê, H. Zhang, M.T. Pham, S. Lefèvre, “Mutual Guidance Meets Supervised Contrastive Learning: Vehicle Detection in Remote Sensing Images”, in *Remote Sensing*, 2022.

- [J3] H.-Â. Lê, F. Guiotte, M.T. Pham, S. Lefèvre, T. Corpetti, "Learning Digital Terrain Models From Point Clouds: ALS2DTM Dataset and Rasterization-Based GAN", in *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (JSTARS)*, 2022.
- [J2] H.-Â. Lê, T. Nimbhorkar, T. Mensink, A. Baslamisli, S. Karaoglu, T. Gevers, "Unsupervised Generation of Optical Flow Datasets", in *Computer Vision and Image Understanding (CVIU)*, 2021.
- [J1] A. Baslamisli, P. Das, H.-Â. Lê, S. Karaoglu, T. Gevers, "ShadingNet: Image Intrinsic by Fine-Grained Shading Decomposition", in *International Journal of Computer Vision (IJCV)*, 2020.

International Conferences

- [C18] H.-Â. Lê, M.T. Pham, Solange Lemai-Chenevier, Daniel Greslou, "Multi-Task Partially Supervised Learning for Super-Resolution and Semantic Segmentation on Earth Observation Data", under submission to *2026 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, 2026.
- [C17] H.-Â. Lê, M.T. Pham, "Box for Mask and Mask for Box: weak losses for multi-task partially supervised learning", accepted for publication in *British Machine Vision Conference (BMVC)*, 2024.
- [C16] A.K. Duong, H.-Â. Lê, M.T. Pham, "Leveraging feature communication in federated learning for remote sensing image classification", in *IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, 2024.
- [C15] H.-Â. Lê, M.T. Pham, "Leveraging knowledge distillation for partial multi-task learning from multiple remote sensing datasets", in *IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, 2024.
- [C14] H.-Â. Lê, M.T. Pham, "Data exploitation: Multi-task learning of object detection and semantic segmentation on partially annotated data", in *British Machine Vision Conference (BMVC)*, 2023.
- [C13] H.-Â. Lê, M.T. Pham, "Knowledge Distillation for Object Detection: from generic to remote sensing datasets", in *IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, 2023.
- [C12] W.-H. Tseng, H.-Â. Lê, A. Boulch, S. Lefèvre, D. Tiede, "CroCo: Cross-Modal Contrastive learning for localization of Earth Observation data", in *ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences (ISPRS)*, 2022.
- [C11] A.A. Osio, H.-Â. Lê, S. Ayugi, F. Onyango, P. Odwe, S. Lefèvre, "Detection of Degraded Acacia tree species using deep neural networks on UAV drone imagery", in *ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences (ISPRS)*, 2022.
- [C10] H.-Â. Lê, P. Das, T. Mensink, T. Gevers, "EDEN: Multimodal Synthetic Dataset of Enclosed GarDEN Scenes", in *CVF Winter Conference of Applications on Computer Vision (WACV)*, 2021.
- [C9] J. Han, S. Karaoglu, H.-Â. Lê, T. Gevers, "Object features and face detection performance: Analyses with 3D-rendered synthetic data", in *International Conference on Pattern Recognition (ICPR)*, 2020.
- [C8] H.-Â. Lê, P. Das, T. Mensink, T. Gevers, "Novel view synthesis from single images via point cloud transformation", in *British Machine Vision Conference (BMVC)*, 2020.
- [C7] H.-Â. Lê, A. Baslamisli, T. Mensink, T. Gevers, "Three for one and one for three: Flow, Segmentation, and Surface Normals", in *British Machine Vision Conference (BMVC)*, 2018 **Oral** (accept. rate 4.3%).
- [C6] A. Baslamisli, T.T. Groenestege, P. Das, H.-Â. Lê, S. Karaoglu, T. Gevers, "Joint Learning of Intrinsic Images and Semantic Segmentation", in *European Conference in Computer Vision (ECCV)*, 2018.
- [C5] A. Baslamisli, H.-Â. Lê, T. Gevers, "CNN based Learning using Reflection and Retinex Models for Intrinsic Image Decomposition", in *Computer Vision and Pattern Recognition (CVPR)*, 2018.
- [C4] H.-Â. Lê, K.N.C. Mac, T.A. Pham, V.T. Nguyen, M.T. Tran, "Multimodal Smart Interactive Presentation System", in *Proceedings of the 15th International Conference on Human-Computer Interaction (HCI)*, 2013.

- [C3] H.-Â. Lê, K.N.C. Mac, T.A. Pham, M.T. Tran, "Realtime Pointing Gesture Recognition and Applications in Multi-user Interaction", in *Proceedings of the 5th Asian Conference on Intelligent Information and Database Systems (ACI-IDS)*, 2013.
- [C2] H.-Â. Lê, K.N.C. Mac, T.A. Pham, V.T. Nguyen, M.T. Tran, AD Duong, "SIM - Smart Interactive Map with Pointing Gestures", in *Proceedings of the 4th International Conference on Intelligent Human-Machine Systems and Cybernetics, IEEE Computer Society's Conference (IHMSC)*, 2012.
- [C1] H.-Â. Lê, M.T. Doan, M.T. Tran, "Webcam-based Laser Dot Detection Technique in Computer Remote Control", in *Proceedings of the 3th International Conference on Theories and Applications of Computer Science: Special issue of The Journal of Science and Technology (ICTACS)*, 2010.

Workshops

- [W5] H.-Â. Lê, M.T. Pham, "Self-Training and Multi-Task Learning for Limited Data: Evaluation Study on Object Detection", in *IEEE International Conference on Computer Vision Workshop (ICCVw)*, 2023
- [W4] R. Tylecek, T. Sattler, H.-Â. Lê, T. Brox, M. Pollefeys, RB. Fisher, T. Gevers, "The Second Workshop on 3D Reconstruction Meets Semantics: Challenge Results Discussion", in *European Conference in Computer Vision Workshop (ECCVw)*, 2018.
- [W3] I. Pratikakis, MA. Savelonas, F. Arnaoutoglou, G. Ioannakis, A. Koutsoudis, T. Theoharis, M.T. Tran, V.T. Nguyen, VK. Pham, HD. Nguyen, H.-Â. Lê, BH. Tran, QH. To, MB. Truong, TV. Phan, MD. Nguyen, T.A. Than, K.N.C. Mac, MN. Do, A.D. Duong, T. Furuya, R. Ohbuchi, M. Aono, S. Tashiro, D. Pickup, X. Sun, PL. Rosin, RR. Martin, "Partial Shape Queries for 3D Object Retrieval", in *Eurographics 2016 Workshop on 3D Object Retrieval*, 2016.
- [W2] M. Eskevich, Q.M. Bui, H.-Â. Lê, B. Huet, "Exploring Video Hyperlinking in Broadcast Media", in *Proceedings of the Third Edition Workshop on Speech, Language and Audio in Multimedia (SLAM)*, 2015.
- [W1] H.-Â. Lê, Q.M. Bui, B. Huet, B. Cervenkova, J. Bouchner, E. Apostolidis, F. Markatopoulou, A. Pournaras, V. Mezaris, D. Stein, S. Eickeler, M. Stadtschnitzer "LinkedTV at MediaEval 2014 Search and Hyperlinking Task", in *Working Notes Proceedings of the MediaEval 2014 Workshop*, 2014.