

THI HOANG NGAN LE

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BIOGRAPHICAL SKETCH

Dr. Le is currently an Assistant Professor and Director of the Artificial Intelligence & Computer Vision [AICV Lab](#) in the Department of Electrical Engineering & Computer Science (EECS) at the University of Arkansas. Previously, she held a Postdoctoral position at Carnegie Mellon University (CMU). Dr. Le obtained her Ph.D. and Master's degrees in Electrical & Computer Engineering from CMU in 2018 and 2015, respectively. She earned her Master's and Bachelor's degrees in Computer Science from Vietnam, in 2009 and 2005, respectively.

Dr. Le is internationally recognized for her significant contributions in Robotics, Machine Learning, Computer Vision, and Medical Analysis. Her research addresses diverse real-world challenges, including trusted decision-making, imperfect data (limited labeled data, noisy data, biased data, unseen data, small objects) and real-time applications on edge devices. Proficient across multiple modalities, she excels in working with image, video, point cloud, volumetric data, time series, and remote sensing data. Notably, her expertise spans image processing, scene understanding, multiple object tracking, behavior analysis, medical image analysis, 3D reconstruction, and real-time robotics perception. Dr. Le's work is considered state-of-the-art, with many of her research endeavors successfully deployed in real-world applications, including cutting-edge implementations on edge devices. Her research portfolio includes ownership of three patents and co-authorship of over 130+ papers and articles across various prestigious conferences, book chapters, and top-tier journals. She holds an h-index of 26 and an i10-index of 64 on Google Scholar, with 2,829 citations as of May 19, 2024 ([8ck0k_UAAAAJ](#)).

Dr. Le has served as an Associate Editor for ScienceDirect's Machine Learning with Applications (MLWA) journal since 2021 and has chaired conferences such as Asilomar and MICAD. Dr. Le has also contributed as a Guest Editor for multiple journals in Frontier and MDPI. She has organized tutorials and workshops at prestigious conference MICCAI such as Deep Reinforcement Learning Tutorial for Medical Imaging at MICCAI 2018 and the Medical Image Learning with Less Labels and Imperfect Data workshop at MICCAI from 2019, 2020. Interpretable and Annotation-Efficient Learning for Medical Image Computing: Third International Workshop 2020. She actively contributes to networking events, particularly for Women in MICCAI from 2019-2022 as an organizer. She has served as the lead instructor for the Google NACMI AMLI Summer Bootcamp in 2021 and 2022.

IMPACT

Over 130 publications and 3 patents with 2,829 citations, an h-index of 26 and an i10-index of 64 (citation data from Google Scholar¹, May 19, 2024).

The Google Scholar Metrics² for publication rankings.

APPOINTMENTS

Assistant Professor Aug. 2019 - present
Department of Electrical Engineering and Computer Science, University of Arkansas.

Postdoctoral Jul. 2018 - Aug. 2019
Department of Electrical and Computer Engineering, Carnegie Mellon University.

EDUCATION

PhD Electrical and Computer Engineering 2015 - 2018
Carnegie Mellon University

- Title: Contextual Recurrent Level Set Networks and Recurrent Residual Networks for Semantic Labeling.
- Thesis committees:
 - Prof. Marios Savvides, Carnegie Mellon University, Pennsylvania, USA (Chair).
 - Prof. Vijayakumar Bhagavatula, Carnegie Mellon University, Pennsylvania, USA.
 - Prof. Arun A. Ross, Michigan State University, Michigan, USA.
 - Dr. Saad J. Bedros, University of Minnesota, Minnesota, USA.

Master Electrical and Computer Engineering 2011 - 2015
Carnegie Mellon University

- Title: "SparCLEs: Dynamic l_1 Sparse Classifiers with Level Sets for Robust Beard/Moustache Detection and Segmentation".
- Thesis committees:
 - Prof. Marios Savvides, Carnegie Mellon University, Pennsylvania, USA (Chair).
 - Prof. Vijayakumar Bhagavatula, Carnegie Mellon University, Pittsburgh, USA.
 - Prof. John M. Dolan, Carnegie Mellon University, Pittsburgh, USA.

Master Computer Science 2006 - 2009
University of Science.

- Title: Secret Sharing Using Multiple Shadow Images.
- Thesis committees:
 - Prof. Hoai Bac Le, University of Science, Vietnam (Chair).
 - Prof. Chin-Chen Chang, Feng Chia University, Taiwan (Chair).
 - Prof. Anh-Duc Duong, University of Science, Vietnam.

¹https://scholar.google.com/citations?user=8ck0k_UAAAAJ&hl=en

²https://scholar.google.com/citations?view_op=top_venues&vq=eng_computervisionpatternrecognition

- Associate Prof. Quoc-Ngoc Ly, University of Science, , Vietnam.
- Associate Prof. Son Dang, University of Technology and Education, Vietnam.

Bachelor Computer Science

2001 - 2005

University of Science.

- Title: Data Hiding in Digital Audio.
- Thesis committees:
 - Prof. Hoai Bac Le, University of Science, Vietnam (Chair).
 - Prof. Anh-Duc Duong, University of Science, Vietnam.
 - Dr. Tien Len Nguyen, University of Science, Vietnam.

ADVISING STUDENTS & STUDENTS' AWARDS

- *Dissertation Committee Chair:*
 - Khoa Vo, PhD student, Fall 2020 - present.
 - Minh Tran, PhD student, August 2021 - present.
 - Thang Pham, PhD student, Fall 2022 - present.
 - Thinh Phan, PhD student, Spring 2023 - present.
 - Chiyou Vang, PhD student, Fall 2023 - present.
 - Duy Le, PhD student, Summer 2024 - present.
 - Vidhiwar Singh Rathour, Spring 2022 - Spring 2022.
 - Kashu Yamayaki, Master student, Spring 2021 - Spring 2023.
 - Sang Truong, Master student, Fall 2021 - Fall 2023.
 - Adrian De Luis, Master student, Fall 2021 - Fall 2023.
 - Marta Veganzones Rodriguez, Fall 2022 - present.
 - Vuong Ho, Master student, Summer 2023 - present.
 - Tan Bui, Master student, Fall 2023 - present.
 - Esteban Duran Marti, Fall 2023 - present.
 - Farid Hashemian, Master student, Spring 2024 - present.
 - Kim Tran Hoang, Master student, Summer 2024 - present.
- *Dissertation Committee Member:*
 - Hadi Salman, Graduated, 2019 - 2023.
 - Racine Cleveland, In-Process, 2022 - present.
 - Vivek Kumar Tiwari, In-Process, 2023 - present.
 - Huy Xuan Mai, In-Process, 2020 - Present.
 - Dunlap,Christy Lela, In-Process, 2020 - Present.
 - Duc Thanh Bui, In-Process, 2020 - Present.
 - Hao Van, In-Process, May 2021 - Present.

- ***Honor Mentoring/Advising:***

- Kashu Yamayaki, Graduated Fall 2019 - Fall 2022.
- Chiyou Vang, Graduated, Spring 2022– Spring 2023.
- Rohit Kala, Graduated, Spring 2022– Spring 2023.
- Noah Core, Graduated, Spring 2023– Fall 2023.
- Jacob Brecheisen, Graduated (Fall 2022 - Spring 2024)
- Winston Bounsavy, In-Process, Fall 2022 – present.
- Nicholas Smith, In-Process, Fall 2022 – Spring 2023.
- Michael Ofodile, In-Process, Summer 2023.
- Hayden Threlfall, In-Process, Fall 2022 – Spring 2023.
- Brady Morgan, In-Process, Fall 2022 – Spring 2023.
- Anh Tran, In Progress, Fall 2022 - present.
- Taisei Hanyu, In Progress, Spring 2022 - present.
- Jackson Bumgarner, In Progress, Fall 2023 - present.
- Gabriel Rivera, In Progress, Fall 2023.
- Isaac Phillips, In Progress, Spring 2023 - present.
- Andrew Lockett, In Progress, Spring 2023 - present.
- Ethan Coffman, In Progress, Spring 2023 - present.
- Reagan Clark, In Progress, Spring 2023 - present.
- Yuki Ikebe, In Progress, Spring 2024 - present.

- ***Student Awards & Honors:***

- Taisei Hanyu, Honors Research Travel Grant, 2024.
- Khoa Vo, Registration Award to CVPR 2024.
- Think Phan, Registration Award to CVPR 2024.
- Vuong Ho, Registration Award to CVPR 2024.
- Minh Tran, Registration Award to CVPR 2024.
- Thang Pham, Doctoral Academy Fellowship DAF, 2022.
- Duc Le, Doctoral Academy Fellowship DAF, 2021.
- Minh Tran, Travel Award to SGSMA 2024.
- Adrian Luis, Travel Award to SGSMA 2024.
- Kashu Yamazaki, Travel Award to AAAI 2023.
- Anh Tran, Student Undergraduate Research Fellowship (SURF) 2024.
- Taisei Hanyu, Honors College Research Grants 2024.
- Think Phan, Thomas Endowed Doctoral Fellowship, 2023
- Sang Truong, Thomas Endowed Doctoral Fellowship, 2023.
- Minh Tran, Thomas Endowed Doctoral Fellowship, 2023.

- Khoa Vo, Thomas Endowed Doctoral Fellowship, 2023.
- Winston Bounsavy, Research Experiences for Undergraduates (REU), AI SUSTEIN 2023.
- Michael Ofodile, Research Experiences for Undergraduates (REU), AI SUSTEIN 2023.
- Jacob Brecheisen, Research Experiences for Undergraduates (REU), AI SUSTEIN 2023.
- Rohit Kala, Honors College Research Grants 2023.
- Chiyou Vang, Honors College Research Grants 2023.
- Kashu Yamazaki, Reginald R. “Barney” & Jameson A. Baxter Graduate, 2022.
- Kashu Yamazaki, the 21st Century Research Leadership Chair, 2022.
- Khoa Vo, W.R. Thomas Endowed Graduate Fellowship, 2022.
- Minh Tran, W.R. Thomas Endowed Graduate Fellowship, 2022.
- Sang Truong, Reginald R. “Barney” & Jameson A. Baxter Graduate Fellowship, 2022.
- Minh Tran, Rodger S. Kline Endowed Chair, 2022.
- Sang Truong, Rodger S. Kline Endowed Chair, 2022.
- Khoa Vo, Rodger S. Kline Endowed Chair, 2022.
- Taisei Hanyu, NSF DART Summer Undergraduate Research Experiences (SURE), 2022.

ACADEMIC AWARDS

- Dean’s Excellence Rising Star Faculty Research Award 2024.
- Best Paper Finalist, IROS, Detroit, Oct. 2023.
- Editor’s Choice Articles, Brain Sciences, 2021.
- NIH Travel Award, MICCAI, Spain, Sep. 2018.
- PhD Scholarship, Carnegie Mellon University, U.S., Sep. 2011 - May. 2018.
- Fellowship Award, Concordia University, Canada, May. 2010 - Sep. 2011.
- Best Paper Award, International Symposium on Electronic Commerce and Security, 2008.
- Vietnamese Government Scholarship for Graduate Students, 2008-2010.
- Second Prize, Vietnamese Talents Competition, 2007.
- First Prize, “Light the Hope” Award by the Vietnamese Government for assisting disabled individuals, 2007.
- First Prize, Nationwide Student’s Research Competition, 2005.
- First Prize, VIFOTEC (Vietnam Fund for Supporting Technology), 2005.
- Scholarship, Tuong Minh Company, 2004.

TEACHING

- CSCE 5013/5563 Deep Learning (Graduate) - Fall 2019, Fall 2020, Fall 2021, Fall 2022, Fall 2023.
- CSCE 4613/5613 Introduction to Artificial Intelligence (Undergraduate and Graduate) - Spring 2020, Spring 2021, Spring 2022, Spring 2023.
- CSCE 4133/5133 Algorithms (Undergraduate and Graduate) - Spring 2023, Spring 2024.
- CSCE 490V NACME-Google AMLI Summer Bootcamp (Undergraduate), Summer 2021, Summer 2022.

Courses taught (by semester) and course evaluations since initial appointment is as follows:

Alpha Code and Course Number	Course Name	Semester and Year	Number of Students Enrolled	Course Format (Platform, Online)	University Core Items*		
					1	2	3
CSCE5013	Deep Learning	Fall 2019	39	Platform	3.19	3.16	3.38
CSCE4613/5613	Artificial Intelligence	Spring 2020	49	Online	4.15	4.10	3.77
CSCE5013	Deep Learning	Fall 2020	16	Online	4.27	4.20	4.13
CSCE4613/5613	Artificial Intelligence	Spring 2021	58	Online	3.94	4.06	3.74
CSCE5013	Deep Learning	Fall 2021	12	Platform	4.50	4.67	4.17
CSCE4613/5613	Artificial Intelligence	Spring 2022	64	Platform	3.47	3.37	3.37
CSCE4613/5613	Artificial Intelligence	Fall 2022	42	Platform	4.52	4.39	4.03
CSCE5563	Deep Learning	Fall 2022	21	Platform	4.37	4.21	4.32
CSCE4133/5133	Algorithms	Spring 2023	38	Platform	4.5	4.71	4.21
CSCE4613/5613	Artificial Intelligence	Fall 2023	58	Platform	4.02	4.04	4.06
CSCE5563	Deep Learning	Fall 2023	31	Platform	4.33	4.15	4.04
CSCE4133/5133	Algorithms	Spring 2024	84	Platform	4.39	4.61	4.27

*: Current University Core Items:

Q1: Overall, I would rate this course as. . .

Q2: Overall, I would rate this instructor as. . .

Q3: My instructor is fluent in English. . .

RESEARCH GRANTS/FUNDING AWARDS

In collaborative efforts over the last three years, Dr. Le have successfully secured a total of **\$2,641,076 in funding awards**, comprising \$2,606,076 in external funding awards and \$35,000 in internal funding awards.

External Funding Awards

Dr. Le has collaborated on securing 14 new external funding awards. Among these achievements are 11 awards totaling **\$1,917,537 as a Principal Investigator (PI)**, 2 awards totaling **\$5,743,651 as a Co-PI, with her personal share amounting to \$483,966**, and 1 award totaling \$20,000,000 as Senior Personnel (her share: \$204,573).

- **(PI)**, “EFRI BRAID: Unsupervised Continual Learning with Hierarchical Timescales and Plasticity Mechanisms”. Sponsor: National Science Foundation. Award: \$129,978. Aug. 2022 - Jul. 2026.

- **(PI)**, “SCH: AI-Doctor Collaborative Medical Diagnosis” . Sponsor: National Science Foundation. Award: \$234,376. Aug. 2022 – Jul. 2026.
- **(PI)**, “Computer Vision-based Automated System to Monitor Broiler Behavior”. Sponsor: Aviagen Inc., Award: \$702,985. Duration: Dec. 2022 - Nov. 2026.
- **(PI)**, “Chick Sexing: A Pilot Research on Vent and Head Part with Computer Vision”. Sponsor: Cobb-Vantress. Award: \$172,185. Duration: Sep. 2022 - Aug. 2024.
- **(PI)**, “Computer Vision-based Chicken Gait Identification”. Sponsor: Cobb-Vantress. Award: \$259,592. Duration: Oct. 2021 - Sep. 2024.
- **(PI)**, “Automated Machine Learning & Computer Vision-based Smart Chicken Plant”. Sponsor: Cobb-Vantress. Award: \$156,769. Duration: Oct. 2021 – Sep. 2023.
- **(PI)**, “Precise Aerial Imaging”. Sponsor: Arkansas NSF EPSCoR - DART SURE. Award: \$7,260. Duration: May. 2022 - Aug. 2022.
- **(PI)**, “Self-supervised Learning for Real-Time Automatic Profiling of Distributed Solar Photovoltaic Arrays”. Sponsor: AI SUSTEIN. Award: \$30,000. Sep. 2022 - Aug. 2024.
- **(PI)**, “Advancing Artificial Intelligence to Predict Cardiotoxicity”. Direct Sponsor: West Virginia University, Primary Sponsor: National Science Foundation. Award: \$46,989. Duration: Jun. 2020 - Jul. 2023.
- **(PI)**, “Artificial Intelligence-based and Vision-based Broiler Body Weight Estimation”. Sponsor: Adsiseo. Award: \$147,511. Duration: Jan. 2021 – Dec. 2023.
- **(PI)**, “RetinaNet to WasteFood dataset: A pilot work”. Sponsor: Winnow Solutions. Award: \$29,892. Duration: Feb. 2020 – Aug. 2020.
- **(co-PI)**, “NSF CA, Track J: Cultivate IQ: Empowering Regional Food Systems”. Sponsor: National Science Foundation. Award: \$5,000,000. Her share: \$374,409. Jan. 2024 - Dec. 2026.
- **(co-PI)**, “NSF CA: Data-driven Agriculture to Bridge Small Farms to Regional Food Supply Chains”. Sponsor: National Science Foundation. Award: \$743,651. Her share: \$109,557. Jan. 2023 - Dec. 2023.
- **(Personnel)**, “DART: From Smart Curation to Socially Aware Decision Making”. Sponsor: National Science Foundation NSF. Award: \$20,000,000. Her share: \$204,573. Duration: Aug. 2019 - Aug. 2023.

Internal Funding Awards

Additionally, Dr. Le has obtained 3 internal funding awards including 2 awards totaling \$30,000 as a PI and 1 award totaling \$15,000 as a Co-PI.

- **(PI)**, “Robot design for agricultural applications and outdoor research”, College of Engineering. Award: \$25,000. Jul. 2022 - Jun. 2024.
- **(PI)**, Honors College Mentor Award. Award: \$5,000. Aug. 2022 - Dec. 2024.
- **(co-PI)**, “Utilization of computer imaging for the early detection of bovine respiratory disease in beef cattle”, Animal Health/UADA. Award: \$15,000. Her share: \$5,000. Jul. 2022 - Jun. 2024.

Pending Proposals

- **(co-PI)**, “Center for Rural Equitable and Accessible Mobility (CREAM)”, U.S. Department of Transportation, Award: \$3,401,037. Her share is 207,389.00.
- **(co-PI)**, “Theme 3: NSF AI Institute for Strengthening AI in Healthcare Engagement, Adaptability, and Learning (AI-HEAL)”, National Science Foundation (Primary), University of West Virginia \$20,000,000. Her share is \$256,000.00.

PUBLICATIONS

Dr. Le’s Google Scholar profile ([8ck0k_UAAAAJ](https://scholar.google.com/citations?user=8ck0k_UAAAAJ)) with *2,829 citations* (as of May 19, 2024), an h-index of 26, and an i10-index of 64. Her research comprises *over 130 peer-reviewed publications*, including *30+ articles in top-tier journals* such as International Journal of Computer Vision IJCV (IF = 19.5), IEEE Transactions on Image Processing TIP (IF = 10.6), IEEE Journal of Biomedical and Health Informatics JBHI (IF = 7.7), Medical Image Analysis MIA (IF = 10.9), Pattern Recognition PR (IF = 8.518), and Artificial Intelligence Review AIRE (IF = 12.0), along with 100+ double-blind publications presented at prestigious conferences e.g., AAAI Conference on Artificial Intelligence, IEEE/CVF Computer Vision and Pattern Recognition CVPR, the International Conference on Computer Vision ICCV, the International Conference on Acoustics, Speech, and Signal Processing ICASSP, the Neural Information Processing Systems NeurIPS, the International Conference on Medical Image Computing and Computer Assisted Intervention MICCAI, IEEE/CVF Winter Conference on Applications of Computer Vision WACV, IEEE/RSJ International Conference on Intelligent Robots and Systems IROS, International Conference on Robotics and Automation ICRA, Association for Computational Linguistics ACL, etc. Additionally, Dr. Le holds *two US patents* P2757US00, P2736US00, and *one European patent* EP0628822B1.

Patents

- Ngan T.H. Le, Michael Kidd, “Chicken Processing Plant With Automated Computer Vision”, P2757US00, UADA 2021-020 (UAF 2021-032).
- Ngan T.H. Le, Michael Kidd, “Artificial Intelligence And Vision-Based Broiler Body Weight Measurement System And Process”, P2736US00, UADA 2021-009 (UAF 2021-017)
- Ngan T.H. Le, Marios Savvides, Boyiadzis Michael, Contis Lydia, Methods and Systems for Disease Classification, EP0628822B1

Selected Peer Reviewing Journal Articles

- Chappa, Naga Venkata Sai Raviteja, Pha Nguyen, **Ngan Le**, Page Daniel Dobbs, and Khoa Luu. ”HAtt-Flow: Hierarchical Attention-Flow Mechanism for Group-Activity Scene Graph Generation in Videos.” *Sensors* 24, no. 11 (2024): 3372. (IF = 3.9)
- Tran, Minh, Sang Truong, Arthur FA Fernandes, Michael T. Kidd, and **Ngan Le**. ”CarcassFormer: An End-to-end Transformer-based Framework for Simultaneous Localization, Segmentation and Classification of Poultry Carcass Defect.” *Poultry Science* (2024): 103765.(IF = 4.4)

- Khoa Vo, Sang Truong, Kashu Yamazaki, Bhiksha Raj, Minh-Triet Tran, and **Ngan Le**. "Aoe-net: Entities interactions modeling with adaptive attention mechanism for temporal action proposals generation." *International Journal of Computer Vision* 131, no. 1 (2023): 302-323. (**IF = 19.5**).
- Duc Le, Sang Truong, Patel Brijesh, Donald A. Adjeroh, and **Ngan Le**. "scl-st: Supervised contrastive learning with semantic transformations for multiple lead ecg arrhythmia classification." *IEEE journal of biomedical and health informatics* 27, no. 6 (2023): 2818-2828. (**IF = 7.7**).
- Pha Nguyen, Kha Gia Quach, Chi Nhan Duong, Son Lam Phung, **Ngan Le**, and Khoa Luu. "Multi-camera multi-object tracking on the move via single-stage global association approach." *Pattern Recognition* 152 (2024): 110457. (**IF = 8.518**).
- Thanh-Dat Truong, Chi Nhan Duong, Kha Gia Quach, **Ngan Le**, Tien D. Bui, and Khoa Luu. "LIAAD: Lightweight attentive angular distillation for large-scale age-invariant face recognition." *Neurocomputing* 543 (2023): 126198. (**IF = 6.0**).
- Kha Gia Quach, **Ngan Le**, Chi Nhan Duong, Ibsa Jalata, Kaushik Roy, and Khoa Luu. "Non-volume preserving-based fusion to group-level emotion recognition on crowd videos." *Pattern Recognition* 128 (2022): 108646. (**IF = 8.518**).
- Kashu Yamazaki, Viet-Khoa Vo-Ho, Darshan Bulsara, and **Ngan Le**. "Spiking neural networks and their applications: A review." *Brain Sciences* 12, no. 7 (2022): 863. (**Editor's Choice in 2021**).
- Khoa Vo, Kashu Yamazaki, Sang Truong, Minh-Triet Tran, Akihiro Sugimoto, and **Ngan Le**. "Abn: Agent-aware boundary networks for temporal action proposal generation." *IEEE Access* 9 (2021): 126431-126445. (**IF = 3.9**).
- Duc-Quang Vu, **Ngan Le**, and Jia-Ching Wang. "Teaching yourself: A self-knowledge distillation approach to action recognition." *IEEE Access* 9 (2021): 105711-105723. (**IF = 3.9**).
- **Ngan Le**, Toan Bui, Viet-Khoa Vo-Ho, Kashu Yamazaki, and Khoa Luu. "Narrow band active contour attention model for medical segmentation." *Diagnostics* 11, no. 8 (2021): 1393. (**IF = 3.6**).
- **Ngan Le**, Vidhiwar Singh Rathour, Kashu Yamazaki, Khoa Luu, and Marios Savvides. "Deep reinforcement learning in computer vision: a comprehensive survey." *Artificial Intelligence Review* (2022): 1-87. (**IF = 12.0**)
- S. Kevin Zhou, Hoang Ngan Le, Khoa Luu, Hien V. Nguyen, and Nicholas Ayache. "Deep reinforcement learning in medical imaging: A literature review." *Medical image analysis* 73 (2021): 102193. (**IF = 10.9**).
- Truong, Thanh-Dat, Chi Nhan Duong, Minh-Triet Tran, **Ngan Le**, and Khoa Luu. "Fast flow reconstruction via robust invertible $n \times n$ convolution." *Future Internet* 13, no. 7 (2021): 179. (**IF = 3.4**).
- **Ngan Le**, J.Sorensen, T.Bui, A.Choudhary, K.Luu, H.Nguyen, "Enhance Portable Radiograph for Fast and High Accurate Covid-19 Monitoring", *Diagnostics*, 2021. (**IF = 3.6**).

- Duong, Chi Nhan, Kha Gia Quach, Khoa Luu, **Ngan Le**, Marios Savvides, and Tien D. Bui. "Learning from longitudinal face demonstration—where tractable deep modeling meets inverse reinforcement learning." *International Journal of Computer Vision* 127 (2019): 957-971. (**IF = 19.5**).
- **Ngan Le**, Kha Gia Quach, Khoa Luu, Chi Nhan Duong, and Marios Savvides. "Reformulating level sets as deep recurrent neural network approach to semantic segmentation." *IEEE Transactions on Image Processing* 27, no. 5 (2018): 2393-2407. (**IF = 10.6**).
- **Ngan Le**, Chi Nhan Duong, Ligong Han, Khoa Luu, Kha Gia Quach, and Marios Savvides. "Deep contextual recurrent residual networks for scene labeling." *Pattern Recognition* 80 (2018): 32-41. (**IF = 8.518**).
- **Ngan Le**, Khoa Luu, Chenchen Zhu, and Marios Savvides. "Semi self-training beard/moustache detection and segmentation simultaneously." *Image and Vision Computing* 58 (2017): 214-223. (**IF = 4.7**).
- **Ngan Le**, ChenChen Zhu, Yutong Zheng, Khoa Luu, and Marios Savvides. "DeepSafeDrive: A grammar-aware driver parsing approach to Driver Behavioral Situational Awareness (DBSAW)." *Pattern Recognition* 66 (2017): 229-238. (**IF = 8.518**).
- **Ngan Le** and Marios Savvides. "A novel shape constrained feature-based active contour model for lips/mouth segmentation in the wild." *Pattern Recognition* 54 (2016): 23-33. (**IF = 8.518**).
- **Ngan Le**, Keshav Seshadri, Khoa Luu, and Marios Savvides. "Facial aging and asymmetry decomposition based approaches to identification of twins." *Pattern Recognition* 48, no. 12 (2015): 3843-3856. (**IF = 8.518**).
- **Ngan Le**, Khoa Luu, and Marios Savvides. "SparCLEs: Dynamic ℓ_1 Sparse Classifiers With Level Sets for Robust Beard/Moustache Detection and Segmentation." *IEEE Transactions on Image Processing* 22, no. 8 (2013): 3097-3107. (**IF = 10.6**).
- CC.Chang, JS.Lee, **Ngan Le**, "Hybrid wet paper coding mechanism for steganography employing n-indicator and fuzzy edge detector", *Digital Signal Processing*, 20(4), pp.1286-1307, 2010. (**IF = 2.9**).
- **Ngan Le**, Chia-Chen Lin, Chin-Chen Chang, and Hoai Bac Le. "A high quality and small shadow size visual secret sharing scheme based on hybrid strategy for grayscale images." *Digital Signal Processing* 21, no. 6 (2011): 734-745 (**IF = 2.9**).
- W.Chen, CC.Chang, and **Ngan Le**. "High payload steganography mechanism using hybrid edge detector." *Expert Systems with applications* 37, no. 4 (2010): 3292-3301, 2010. (**IF = 15.9**).
- Chang, Chin-Chen, Chia-Chen Lin, **Ngan Le**, and Hoai Bac Le. "Self-verifying visual secret sharing using error diffusion and interpolation techniques." *IEEE Transactions on Information Forensics and Security* 4, no. 4 (2009): 790-801. (**IF = 8.0**).
- Chang, Chin-Chen, Chia-Chen Lin, **Ngan Le**, and Hoai Bac Le. "Sharing a verifiable secret image using two shadows." *Pattern Recognition* 42, no. 11 (2009): 3097-3114. (**IF = 8.518**).

Selected Double-Blind Reviewing Conference Papers

- Tran, Kim Hoang, Tien-Phat Nguyen, Anh Duy Le Dinh, Pha Nguyen, Thinh Phan, Khoa Luu, Donald Adjeroh, and **Ngan Le**. "Z-GMOT: Zero-shot Generic Multiple Object Tracking." The 2024 Annual Conference of the North American Chapter of the Association for Computational Linguistics, NAACL Findings, June 2024 (Accepted). (**Findings Acceptance Rate 12.5%, among 2,456 submissions**).
- Tran, Kim Hoang, Phuc Vuong Do, Ngoc Quoc Ly, and **Ngan Le**. "Unifying Global and Local Scene Entities Modelling for Precise Action Spotting." International Joint Conference on Neural Networks IJCNN July 2024 (Accepted, Oral Presentation).
- Tran, Minh, Winston Bounsavy, Khoa Vo, Anh Nguyen, Tri Nguyen, and **Ngan Le**. "ShapeFormer: Shape Prior Visible-to-Amodal Transformer-based Amodal Instance Segmentation." International Joint Conference on Neural Networks IJCNN 2024 July 2024 (Accepted, Oral Presentation, Oral Presentation).
- Trinh, Quoc-Huy, Nhat-Tan Bui, Phuoc-Thao Vo Thi, Hai-Dang Nguyen, Debesh Jha, Ulas Bagci, **Ngan Le**, and Minh-Triet Tran. "Pose Guidance by Supervision: A Framework for Clothes-Changing Person Re-Identification.", IEEE International Conference on Advanced Video and Signal-Based Surveillance AVSS July 2024 (Accepted).
- Bui, Nhat-Tan, Dinh-Hieu Hoang, Thinh Phan, Minh-Triet Tran, Brijesh Patel, Donald Adjeroh, and **Ngan Le**. "TSRNet: Simple Framework for Real-time ECG Anomaly Detection with Multimodal Time and Spectrogram Restoration Network.", IEEE International Symposium on Biomedical Imaging ISBI May 2024. (Accepted).
- Bui, Nhat-Tan, Dinh-Hieu Hoang, Minh-Triet Tran, and **Ngan Le**. "Sam3d: Segment anything model in volumetric medical images." IEEE International Symposium on Biomedical Imaging ISBI May 2024. (Accepted).
- Le, Huy, Tung Kieu, Anh Nguyen, and **Ngan Le**. "WAVER: Writing-style Agnostic Video Retrieval via Distilling Vision-Language Models Through Open-Vocabulary Knowledge.", In Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), pp. 3025-3029. 2024. (**Oral Acceptance rate: 15%**).
- Pham, Trong Thang, Jacob Brecheisen, Anh Nguyen, Hien Nguyen, and **Ngan Le**. "I-AI: A Controllable & Interpretable AI System for Decoding Radiologists' Intense Focus for Accurate CXR Diagnoses." In Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), pp. 7850-7859. 2024. (**Acceptance rate: 41%**).
- Phan, Thinh, Khoa Vo, Duy Le, Gianfranco Doretto, Donald Adjeroh, and **Ngan Le**. "ZEE-TAD: Adapting Pretrained Vision-Language Model for Zero-Shot End-to-End Temporal Action Detection." In Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision, pp. 7046-7055. 2024. (**Acceptance rate: 41%**).
- Bui, Nhat-Tan, Dinh-Hieu Hoang, Quang-Thuc Nguyen, Minh-Triet Tran, and **Ngan Le**. "MEGANet: Multi-Scale Edge-Guided Attention Network for Weak Boundary Polyp Segmentation." In Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision, pp. 7985-7994. 2024. (**Acceptance rate: 41%**).

- Van Vo, Tuan, Minh Nhat Vu, Baoru Huang, Toan Nguyen, **Ngan Le**, Thieu Vo, and Anh Nguyen. "Open-vocabulary affordance detection using knowledge distillation and text-point correlation." IEEE International Conference on Robotics and Automation ICRA 2024. (Accepted) (**Acceptance rate: 45%**).
- Nguyen, Toan, Minh Nhat Vu, Baoru Huang, Tuan Van Vo, Vy Truong, **Ngan Le**, Thieu Vo, Bac Le, and Anh Nguyen. "Language-Conditioned Affordance-Pose Detection in 3D Point Clouds." IEEE International Conference on Robotics and Automation ICRA 2024 (Accepted) (**Acceptance rate: 45%**).
- Yamazaki, Kashu, Taisei Hanyu, Khoa Vo, Thang Pham, Minh Tran, Gianfranco Doretto, Anh Nguyen, and **Ngan Le**. "Open-Fusion: Real-time Open-Vocabulary 3D Mapping and Queryable Scene Representation." IEEE International Conference on Robotics and Automation ICRA 2024 (Accepted) (**Oral Acceptance rate: 9%**).
- de Luis, Adrian, Minh Tran, Taisei Hanyu, Anh Tran, Liao Haitao, Roy McCann, Alan Mantooth, Ying Huang, and **Ngan Le**. "SolarFormer: Multi-scale Transformer for Solar PV Profiling.", International Conference on Smart Grid Synchronized Measurements & Analytics (SGSMA). 2024 (Accepted)
- Yamazaki, Kashu, Khoa Vo, Quang Sang Truong, Bhiksha Raj, and **Ngan Le**. "VLTinT: visual-linguistic transformer-in-transformer for coherent video paragraph captioning." In Proceedings of the AAAI Conference on Artificial Intelligence, vol. 37, no. 3, pp. 3081-3090. 2023. (**Oral Acceptance rate: 3%**).
- Truong, Thanh-Dat, **Ngan Le**, Bhiksha Raj, Jackson Cothren, and Khoa Luu. "Freedom: Fairness domain adaptation approach to semantic scene understanding." In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition, pp. 19988-19997. 2023. (**Acceptance rate: 25.8%**).
- Nguyen, Toan, Minh Nhat Vu, An Vuong, Dzung Nguyen, Thieu Vo, **Ngan Le**, and Anh Nguyen. "Open-vocabulary affordance detection in 3d point clouds." In 2023 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), pp. 5692-5698. IEEE, 2023. (**Oral Acceptance rate: 10%**), (**Best paper finalist**).
- Vo, Khoa, Trong-Thang Pham, Kashu Yamazaki, Minh Tran, and **Ngan Le**. "DNA: Deformable Neural Articulations Network for Template-free Dynamic 3D Human Reconstruction from Monocular RGB-D Video." In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition, pp. 3675-3684. 2023. (**Acceptance rate: 25.8%**).
- Joo, Hyekang Kevin, Khoa Vo, Kashu Yamazaki, and **Ngan Le**. "Clip-tsa: Clip-assisted temporal self-attention for weakly-supervised video anomaly detection." In 2023 IEEE International Conference on Image Processing (ICIP), pp. 3230-3234. IEEE, 2023. (Oral Presentation Acceptance Rate: 18%).
- Nguyen, Tien-Phat, Trong-Thang Pham, Tri Nguyen, Hieu Le, Dung Nguyen, Hau Lam, Phong Nguyen, Jennifer Fowler, Minh-Triet Tran, and **Ngan Le**. "Embryosformer: Deformable transformer and collaborative encoding-decoding for embryos stage development classification." In Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision, pp. 1981-1990. 2023. (**Acceptance rate: 40.6%**, **Oral Presentation**)

- Tran, Minh-Triet, Khoa T. Vo, Kashu Yamazaki, Arthur F. A. Fernandes, Michael Kidd and **Ngan Le**. "AISFormer: Amodal Instance Segmentation with Transformer." British Machine Vision Conference (2022). (**Acceptance rate: 33.6%, Oral Presentation**).
- Vo, Khoa, Kashu Yamazaki, Phong X. Nguyen, Phat Nguyen, Khoa Luu, and **Ngan Le**. "Contextual explainable video representation: Human perception-based understanding." In 2022 56th Asilomar Conference on Signals, Systems, and Computers, pp. 1326-1333. IEEE, 2022.
- Phan, Thinh, Duc Le, Patel Brijesh, Donald Adjeroh, Jingxian Wu, Morten Olgaard Jensen, and **Ngan Le**. "Multimodality multi-lead ecg arrhythmia classification using self-supervised learning." In 2022 IEEE-EMBS International Conference on Biomedical and Health Informatics (BHI), pp. 01-04. IEEE, 2022.
- Yamazaki, Kashu, Sang Truong, Khoa Vo, Michael Kidd, Chase Rainwater, Khoa Luu, and **Ngan Le**. "Vlcap: Vision-language with contrastive learning for coherent video paragraph captioning." In 2022 IEEE International Conference on Image Processing (ICIP), pp. 3656-3661. IEEE, 2022.
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- Ho, Ngoc-Vuong, Tan Nguyen, Gia-Han Diep, **Ngan Le**, and Binh-Son Hua. "Point-unet: A context-aware point-based neural network for volumetric segmentation." In Medical Image Computing and Computer Assisted Intervention–MICCAI 2021: 24th International Conference, Strasbourg, France, September 27–October 1, 2021, Proceedings, Part I 24, pp. 644-655. Springer International Publishing, 2021. **Acceptance rate: 30.0%**
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- **Ngan Le**, Raajitha Gummadi, and Marios Savvides. "Deep recurrent level set for segmenting brain tumors." In Medical Image Computing and Computer Assisted Intervention–MICCAI 2018: 21st International Conference, Granada, Spain, September 16-20, 2018, Proceedings, Part III 11, pp. 646-653. Springer International Publishing, 2018. **Acceptance rate: 35.5%**.
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- **Ngan Le**, Yutong Zheng, Chenchen Zhu, Khoa Luu, and Marios Savvides. "Multiple scale faster-rcnn approach to driver's cell-phone usage and hands on steering wheel detection." In *Proceedings of the IEEE conference on computer vision and pattern recognition workshops*, pp. 46-53. 2016. (**Spotlight**)
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- **Ngan Le**, Utsav Prabhu, and Marios Savvides. "A novel eyebrow segmentation and eyebrow shape-based identification." In *IEEE International Joint Conference on Biometrics*, pp. 1-8. IEEE, 2014.
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- **Ngan Le**, Khoa Luu, Keshav Seshadri, and Marios Savvides. "Beard and mustache segmentation using sparse classifiers on self-quotient images." In *2012 19th IEEE International Conference on Image Processing*, pp. 165-168. IEEE, 2012.

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- **Ngan Le**, Khoa Luu, Utsav Prabhu, and Marios Savvides. "A novel energy based filter for cross-blink eye detection." In 2012 19th IEEE International Conference on Image Processing, pp. 1845-1848. IEEE, 2012.
- **Ngan Le**, Tien D. Bui, and Ching Y. Suen. "Ternary entropy-based binarization of degraded document images using morphological operators." In 2011 international conference on document analysis and recognition, pp. 114-118. IEEE, 2011.
- **Ngan Le**, Kim Hung Nguyen, and Hoai Bac Le. "A robust biometric watermark-based authentication scheme." In 2010 Fifth International Conference on Digital Information Management (ICDIM), pp. 398-403. IEEE, 2010.
- **Ngan Le**, Kim Hung Nguyen, and Hoai Bac Le. "Literature survey on image watermarking tools, watermark attacks and benchmarking tools." In 2010 Second International Conferences on Advances in Multimedia, pp. 67-73. IEEE, 2010.
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- Lee, Jung-San, and **Ngan Le**, "Hybrid (2, n) visual secret sharing scheme for color images." In 2009 IEEE-RIVF International Conference on Computing and Communication Technologies, pp. 1-8. IEEE, 2009.
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- Chang, Chin-Chen, Chia-Chen Lin, **Ngan Le**, and Hoai Bac Le. "A probabilistic visual secret sharing scheme for grayscale images with voting strategy." In 2008 International Symposium on Electronic Commerce and Security, pp. 184-188. IEEE, 2008. **(Best paper award)**.

Book Chapter

- Tran, Minh, Viet-Khoa Vo-Ho, Kyle Quinn, Hien Nguyen, Khoa Luu, and **Ngan Le**. "CapsNet for medical image segmentation." In Deep Learning for Medical Image Analysis, pp. 75-97. Academic Press, 2024.
- Vo-Ho, Viet-Khoa, Kashu Yamazaki, Hieu Hoang, Minh-Triet Tran, and **Ngan Le**. "Neural architecture search for medical image applications." In Meta Learning With Medical Imaging and Health Informatics Applications, pp. 369-384. Academic Press, 2023.
- **Ngan Le**, Khoa Luu, Chi Nhan Duong, Kha Gia Quach, Thanh Dat Truong, Kyle Sadler, and Marios Savvides. "Active contour model in deep learning era: A revise and review." Applications of hybrid metaheuristic algorithms for image processing (2020): 231-260.

- **Ngan Le**, Khoa Luu, Marios Savvides, Kha Gia Quach, and Chi Nhan Duong. "Recurrent level set networks for instance segmentation." In Pattern Recognition-Selected Methods and Applications. IntechOpen, 2019.

Under Review

- Chiyon Vang, Minh Tran, Arthur F. A. Fernandes, Vivian Breen, Michael T. Kidd, and **Ngan Le**. "Automatic Chicken Gait Estimation", Poultry Science Journal (Under review).
- Marta Veganzones Rodriguez, Thinh Phan, Arthur F. A. Fernandes, Vivian Breen, Michael T. Kidd, and **Ngan Le**. "Facial Chick Sexing: An Automated Chick Sexing System From Chick Facial Image.", Poultry Science Journal (Under review).
- Tran, Minh, Adrian De Luis, Haitao Liao, Ying Huang, Roy McCann, Alan Mantooh, Jack Cothren, and **Ngan Le**. "S3Former: Self-supervised High-resolution Transformer for Solar PV Profiling.", IEEE Transactions on Smart Grid 2024 (Under review).
- Yamazaki, Kashu, Taisei Hanyu, Minh Tran, Adrian Garcia, Anh Tran, Roy McCann, Haitao Liao, and **Ngan Le** "AerialFormer: Multi-resolution Transformer for Aerial Image Segmentation.", IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing 2024 (Under review).
- Tran, Hoai-Chau, Duy MH Nguyen, Duy M. Nguyen, Trung-Tin Nguyen, **Ngan Le**, Pengtao Xie, Daniel Sonntag, James Y. Zou, Binh T. Nguyen, and Mathias Niepert. "Accelerating Transformers with Spectrum-Preserving Token Merging." Neural Information Processing Systems NeurIPS 2024 (Under Review).
- Khoa Vo, Thinh Phan, Kashu Yamazaki, **Ngan Le**, "HENASY: Learning to Assemble Scene-Entities for Interpretable Egocentric Video-Language Model." Neural Information Processing Systems NeurIPS 2024 (Under Review).
- Huy Le, Tung Kieu, **Ngan Le** "DBTVR: Towards DeBias for Text-Video Retrieval", ECCV 2024 (Under Review).
- Toan Nguyen, Minh Nhat Vu, ..., **Ngan Le**, "Language-Driven 6-DoF Grasp Detection Using Negative Prompt Guidance", ECCV 2024 (Under Review).
- Kashu Yamazaki, Taisei Hanyu, Khoa Vo, Mishek Musa, ..., **Ngan Le**, "Real-time Open-set Queryable 3D Mapping", ECCV 2024 (Under Review).
- Minh Tran, Thang Pham, Winston Bounsavy,, Ngan Le, "A2VIS: Amodal-aware Approach to Video Instance Segmentation", ECCV 2024 (Under Review).
- Thang Pham, Ngoc-Vuong Ho, Nhat-Tan Bui, Hien Nguyen, .., **Ngan Le**, "Gen-XAI: Advancing CXR Diagnosis Generation with Explainable Artificial Intelligence", MICCAI 2024 (Under Review).

INVITED TALK

- AAAI symposium, Machine Intelligence for Equitable Global Health, Virginia 2024.
- Computational and Applied Mathematics, Arkansas, 2023.

- WVAR-CRESH: Summer Workshop on AI & Smart Health, West Virginia, 2023.
- NSF DART Conference Little Rock, Arkansas, 2023.
- Southeast Symposium on Contemporary Engineering SSCET Little Rock, Arkansas, 2023.
- NSF DART Conference Little Rock, Arkansas, 2022.
- Department of Electrical and Computer Engineering, University of Houston, Texas, 2022.
- Data Science Summer Camp, Arkansas, 2021.
- Applications of Computer Vision in Retailers, Arkansas, 2020.
- Deep Learning in Medical Imaging, NIH IDeA, Nevada, 2019.

PROFESSIONAL SERVICES

- *Journal Editor Board*: Associate Editor, ScienceDirect Machine Learning with Applications (2021-present).
- *Conference Board*:
 - Technical Chair of International Conference on Medical Imaging and Computer-Aided Diagnosis MICAD (2022-present).
 - Program Chair of Asilomar (2022).
- *Workshop Organizer*:
 - Workshop Medical Image Learning with Less Labels & Imperfect Data, at MICCAI conference, 2019, 2020, 20221.
 - Workshop Interpretable and Annotation-Efficient Learning for Medical Image Computing at MICCAI conference 2020.
 - Workshop Visual Detection, Recognition & Prediction at Altitude & Range, at ICCV conference 2022.
 - Women in MICCAI WiM at MICCAI 2019, 2020, 2021.
 - Women in Computer Vision at ACCV 2024.
 - Robust, Trustworthy and Cost-Optimized Learning Across Multiple Modalities: Theory, Algorithms, and Applications, at ACCV 2024.
- *Panelist*:
 - NSF EPSCoR NASA (2023-Present).
 - NSF GRFP (2022-Present).
 - NSF Agricultural Technologies (2023 - present).
- *Summer Camp Instructor*:
 - Lead instructor of Google NACMI Applied Machine Learning (2021, 2022)
 - DART ASRI 2022.

- *Journal Reviewer*: Transactions on Pattern Analysis and Machine Intelligence TPAMI; Transactions on Signal Processing TSP; IEEE Transactions on Image Processing TIP; Transactions on Artificial Intelligence TAI; Pattern Recognition, PR; Journal of Digital Signal Processing DSP; Journal of Image and Vision Computing JIVC; Artificial Intelligence Review AIRE; Artificial Intelligence in Medicine AIM; International Journal of Computer Vision IJCV; Medical Image Analysis MIA, etc.
- *Conference Reviewer*: International Joint Conference on Artificial Intelligence IJCAI; Conference on Computer Vision and Pattern Recognition CVPR; Conference on Neural Information Processing Systems NeurIPS; European Conference on Computer Vision ECCV; International Conference on Computer Vision ICCV; AAAI; ICASSP; Winter Conference on Applications of Computer Vision WACV; International Conference on Machine Learning ICML; International Conference on Pattern Recognition ICPR; MICCAI; International Conference on Document Analysis and Recognition ICDAR; British Machine Vision Conference BMVC; International Conference on Learning Representations ICLR, etc.
- *Internal Service*:
 - Member of faculty search committees in the Department of CSCE, 2020, 2021, 2024.
 - Chair of CSCE Diversity and Inclusion, 2022.
 - Academic advisor of more than 50 undergraduate students since Fall of 2019.