

Thanh-Phuong Nguyen

Curriculum Vitae

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Formation

- 2011–2021 **Habilitation à Diriger des Recherches en Informatique**, Université de Toulon, France, Représentation Efficace basée sur l'Estimation des Caractéristiques Robustes.
- 2007–2010 **Docteur en Informatique**, Université de Nancy 1 (actuellement Université de Lorraine), France, Courbure Discrète : Applications en Analyse d'Images.
- 2003–2005 : **Master en Informatique**, Institut de la Francophonie pour l'Informatique, Viet Nam.
- 1998–2003 : **Ingénieur en Informatique**, École Polytechnique de Hanoi, Viet Nam.

Positions

- 2015–présent **Maître de conférences**, Université de Toulon.
Département MMI, IUT de Toulon, Université de Toulon
Équipe SIIM, laboratoire LIS, UMR 7020
Publications : 22 revues, 14 conférences
- 2012–2015 **Postdoctorant**, ENSTA Paristech.
Reconnaissance des activités humaines
Publications: 3 revues, 3 conférences
- 2011–2012 **Postdoctorant**, CMM, École des mines de Paris.
Analyse de textures
Publication : 1 conférence
- 2009–2011 **ATER**, Université de Nancy.
96h (2009-2010) + 192h (2010-2011) d'enseignement
Publications : 1 revue + 9 conférences

Expériences Professionnelles

Charges administratives

- 2023–présent **Direction de l'équipe SIIM, UMR 7020, Co-Responsable.**
- 2023–présent **Pôle INPS, Représentant du laboratoire LIS, UMR 7020.**
- 2023–présent **Commission d'aide à la recherche du laboratoire LIS, UMR 7020, Membre.**
- 2022–présent **Département MMI, Responsable des stages.**
- 2018–2023 **Conseil du laboratoire LIS, UMR 7020, Membre.**

Porteur des projets

- 2021–2023 **ROV-Chasseur, ANR ASTRID .**
Apprentissage faiblement supervisé et modèles profonds efficaces déployés sur un ROV pour la détection et classification des objets sous-marins
Partenaires : LIS, LIFO, IGS, Lab-STICC
Budget : 300 k €

Participation aux projets

- 2020–2022 **RAPID Manta, Membre.**

2019-2021 **RAPID Sankit**, *Membre*.
2014-2015 **Digiteo Domobscene**, *Membre*.
2012-2013 **European ITEA2 Spy**, *Membre*.
2011-2012 **Projet industriel confidentiel**, *Membre*.
2007-2010 **ANR Geodib**, *Membre*.

[Jurys de thèse](#)

2021 **Phuoc Hung Truong**, *Sejon University, Korea*, Examinateur.
2019 **Hai Hong Pham**, *Université de Cergy Pontoise, France*, Examinateur.

[Activités collectives](#)

Organisateur **Colloque ORASIS'23**, *Président du colloque ORASIS'23*.
Comité éditorial **Éditeur associé du domaine**, *EAI Endorsed Transactions on Industrial Networks and Intelligent Systems*.
Comité de programme **Membre**.
RRPR'16, ICPRS'17, IPTA'17, MAPR'18, RRPR'18, IPRCS'18, MAPR'19, MAPR'20, ICCE'20, RRPR'20, ICRAMET'20, ICPRS'21, MAPR'21, SETIT'22, RRPR'22, ICPRS'22, MAPR'22, MAPR'23, ICPRS'23

[Encadrement](#)

[Thèses soutenues](#)

2017-2020 **Thanh Tuan Nguyen**, *Représentation Efficace de la Texture Dynamique*, co-encadré avec Frédéric Bouchara (Université de Toulon).

[Thèses en cours](#)

2023-présent **Cong Tu Tran**, *L'apprentissage continu basé sur un apprentissage auto-supervisé*, Université de Toulon.
2023-présent **Thuy Han Uyen Thai**, *L'apprentissage continu basé sur une distillation des connaissances*, Aix-Marseille Université.
2023-présent **Thi Quynh Khanh Dinh**, *Vers une culture agricole intelligente et durable basée sur l'identification automatique et précoce des maladies et des ravageurs affectés : application aux pommiers*, co-encadré avec Nadège Thirion-Moreau (Université de Toulon) et Jean Jacques Simon (Aix-Marseille Université).
2022-présent **Thi Ngoc Phuong Truong**, *Estimation Efficace de la Position de la Main*, co-encadré Dinh Duy Le (UIT, HCMC VNU, Vietnam).
2022-présent **Maurgène Ghezal**, *Imageur intelligent dans les conditions de vision nocturne : co-conception opto-électronique et algorithmique*, co-encadré avec Jean Jaques Simon (Aix-Marseille Université).
2022-présent **Yasmine Soussi**, *Clustering évolutif bio-inspiré multi-objectifs: Cas d'application pour les mutations SARS-CoV-2*, co-encadré avec Mohamed Ben Khelifa (Université de Toulon), Ali Wali (Université de Sfax, Tunisie), Nizar Rokbani (Université de Sfax, Tunisie).
2022-présent **Van Tien Pham**, *Apprentissage profond basé sur la conception de modèles efficaces : applications à la surveillance maritime*, co-encadré avec Yassine Zniyed (Université de Toulon).

[Publications](#)

[Résumé](#)

- **Revue internationale** : 30 (dont la majorité font partie de liste Q1 JCR/WebOfScience, et 22 revues depuis 2018)
- **Conférences internationales** : +30

- 2024 Thanh Tuan Nguyen, Thanh Phuong Nguyen, and Frédéric Bouchara. Adequately hierarchical patterns based on pairwise regions. *Multimedia Systems*, 2024.
- 2023 Nguyen Thanh Tuan, Nguyen Thanh Phuong, and Thirion-Moreau Nadège. Locating robust patterns based on invariant of ltp-based features. *Pattern Recognition Letters*, volume 165, 2023.
- 2023 Nguyen Thanh Phuong and Nguyen Thanh Tuan. Robust detectors of rotationally symmetric shapes based on novel semi-shape signatures. *Pattern Recognition*, volume 138, 2023.
- 2023 Thanh Tuan Nguyen, Thanh Phuong Nguyen, and Frédéric Bouchara. Representing dynamic textures based on polarized gradient features. *Mach. Vis. Appl.*, volume 34, page 92, 2023.
- 2023 Thanh Tuan Nguyen and Thanh Phuong Nguyen. A comprehensive taxonomy of dynamic texture representation. *ACM Computing Surveys*, volume 55, pages 1–39, 2023.
- 2023 Hong-Quan Nguyen, Trung-Hieu Le, Kien Tran, Hoang-Nhat Tran, Thanh-Hai Tran, Thi-Lan Le, Hai Vu, Cuong Pham, Thanh Phuong Nguyen, and Huu-Thanh Nguyen. Hand gesture recognition from wrist-worn camera for human-machine interaction. *IEEE Access*, volume 11, pages 53262–53274, 2023.
- 2022 Thanh Tuan Nguyen, Thanh Phuong Nguyen, and Frédéric Bouchara. Dynamic texture description using adapted bipolar-invariant and blurred features. *Multidimensional Systems and Signal Processing*, 2022.
- 2022 Thanh Phuong Nguyen, Phuoc Hung Truong, Thanh Tuan Nguyen, and Yong-Guk Kim. Reflection symmetry detection of shapes based on shape signatures. *Pattern Recognition*, volume 128, 2022.
- 2021 Phuoc Hung Truong, Thanh Phuong Nguyen, and Yong-Guk Kim. Weighted statistical binary patterns for facial feature representation. *Applied Intelligence*, 2021.
- 2021 Thanh Tuan Nguyen, Thanh Phuong Nguyen, and Frédéric Bouchara. Prominent local representation for dynamic textures based on high-order gaussian-gradients. *IEEE Trans. Multim.*, volume 23, pages 1367–1382, 2021.
- 2021 Thanh Tuan Nguyen, Thanh Phuong Nguyen, and Frédéric Bouchara. A novel filtering kernel based on difference of derivative gaussians with applications to dynamic texture representation. *Signal Process. Image Commun.*, volume 98, page 116394, 2021.
- 2021 Thanh Tuan Nguyen, Thanh Phuong Nguyen, and Frédéric Bouchara. Dynamic texture representation based on oriented magnitudes of gaussian gradients. *J. Vis. Commun. Image Represent.*, volume 81, page 103330, 2021.
- 2020 Thanh Tuan Nguyen, Thanh Phuong Nguyen, Frédéric Bouchara, and Xuan Son Nguyen. Momental directional patterns for dynamic texture recognition. *Comput. Vis. Image Underst.*, volume 194, page 102882, 2020.
- 2020 Thanh Tuan Nguyen, Thanh Phuong Nguyen, and Frédéric Bouchara. Rubik gaussian-based patterns for dynamic texture classification. *Pattern Recognit. Lett.*, volume 135, pages 180–187, 2020.
- 2020 Thanh Tuan Nguyen, Thanh Phuong Nguyen, and Frédéric Bouchara. Directional dense-trajectory-based patterns for dynamic texture recognition. *IET Comput. Vis.*, volume 14, pages 162–176, 2020.
- 2020 Thanh Phuong Nguyen, Xuan Son Nguyen, Mohamed Anouar Borgi, and Maï K. Nguyen. A projection-based method for shape measurement. *J. Math. Imaging Vis.*, volume 62, pages 489–504, 2020.
- 2019 Xuan Son Nguyen, Abdel-Iliah Mouaddib, and Thanh Phuong Nguyen. Hierarchical gaussian descriptor based on local pooling for action recognition. *Mach. Vis. Appl.*, volume 30, pages 321–343, 2019.

- 2018 Xuan Son Nguyen, Thanh Phuong Nguyen, François Charpillet, and Ngoc-Son Vu. Local derivative pattern for action recognition in depth images. *Multim. Tools Appl.*, volume 77, pages 8531–8549, 2018.
- 2018 Xuan Son Nguyen, Abdel-Ilah Mouaddib, Thanh Phuong Nguyen, and Laurent Jeanpierre. Action recognition in depth videos using hierarchical gaussian descriptor. *Multim. Tools Appl.*, volume 77, pages 21617–21652, 2018.
- 2018 Thanh Tuan Nguyen, Thanh Phuong Nguyen, and Frédéric Bouchara. Completed statistical adaptive patterns on three orthogonal planes for recognition of dynamic textures and scenes. *J. Electronic Imaging*, volume 27, page 053044, 2018.
- 2018 Thanh Phuong Nguyen and Xuan Son Nguyen. Shape measurement using lip-signature. *Comput. Vis. Image Underst.*, volume 171, pages 83–94, 2018.
- 2018 Mohamed Anouar Borgi, Thanh Phuong Nguyen, Demetrio Labate, and Chokri Ben Amar. Statistical binary patterns and post-competitive representation for pattern recognition. *Int. J. Mach. Learn. Cybern.*, volume 9, pages 1023–1038, 2018.
- 2016 Thanh Phuong Nguyen, Ngoc-Son Vu, and Antoine Manzanera. Statistical binary patterns for rotational invariant texture classification. *Neurocomputing*, volume 173, pages 1565–1577, 2016.
- 2016 Thanh Phuong Nguyen, Antoine Manzanera, Walter G. Kropatsch, and Xuan Son Nguyen. Topological attribute patterns for texture recognition. *Pattern Recognit. Lett.*, volume 80, pages 91–97, 2016.
- 2016 Antoine Manzanera, Thanh Phuong Nguyen, and Xiaolei Xu. Line and circle detection using dense one-to-one hough transforms on greyscale images. *EURASIP J. Image Video Process.*, volume 2016, page 46, 2016.
- 2015 Thanh Phuong Nguyen and Thai V. Hoang. Projection-based polygonality measurement. *IEEE Trans. Image Process.*, volume 24, pages 305–315, 2015.
- 2014 Ngoc-Son Vu, Thanh Phuong Nguyen, and Christophe Garcia. Improving texture categorization with biologically-inspired filtering. *Image Vis. Comput.*, volume 32, pages 424–436, 2014.
- 2014 Thanh Phuong Nguyen, Antoine Manzanera, Matthieu Garrigues, and Ngoc-Son Vu. Spatial motion patterns: Action models from semi-dense trajectories. *Int. J. Pattern Recognit. Artif. Intell.*, volume 28, 2014.
- 2011 Thanh Phuong Nguyen and Isabelle Debled-Rennesson. A discrete geometry approach for dominant point detection. *Pattern Recognit.*, volume 44, pages 32–44, 2011.
- 2008 Thanh Phuong Nguyen and Isabelle Debled-Rennesson. On the local properties of digital curves. *Int. J. Shape Model.*, volume 14, pages 105–125, 2008.

Conférences internationales

- 2022 Thanh-Hai Tran Thanh Tuan Nguyen, Thanh Phuong Nguyen. Detecting Reflectional Symmetry of Binary Shapes Based on Generalized R-Transform. In *MAPR*, pages 1–6, 2022.
- 2022 Thanh Hai Tran Thanh Phuong Nguyen, Thanh Tuan Nguyen. Projection of semi-shapes for rotational symmetry detection. In *IEEE International Conference on Pattern Recognition*, 2022.
- 2021 Thanh-Hai Tran, Hoang-Nhat Tran, Hong-Quan Nguyen, Trung-Hieu Le, Van-Thang Nguyen, Trung-Kien Tran, Cuong Pham, Thi-Lan Le, Hai Vu, Thanh Phuong Nguyen, and Nguyen Huu Thanh. A pilot study on hand posture recognition from wrist-worn camera for human machine interaction. In *2021 International Conference on Advanced Technologies for Communications (ATC)*, pages 201–206, Ho Chi Minh City, Vietnam, October 2021. IEEE.
- 2021 Thanh-Hai Tran, Duc Trung Nguyen, and Thanh Phuong Nguyen. Human Posture Classification from Multiple Viewpoints and Application for Fall Detection. In *2020 IEEE Eighth International Conference on Communications and Electronics (ICCE)*, pages 262–267, Phu Quoc Island, Vietnam, January 2021. IEEE.

- 2020 Van-Tien Pham, Thi-Lan Le, Thanh-Hai Tran, and Thanh Phuong Nguyen. Hand detection and segmentation using multimodal information from Kinect. In *2020 International Conference on Multimedia Analysis and Pattern Recognition (MAPR)*, pages 1–6, Ha Noi, Vietnam, October 2020. IEEE.
- 2020 Thanh Tuan Nguyen, Thanh Phuong Nguyen, and Frédéric Bouchara. Dynamic Texture Representation Based on Hierarchical Local Patterns. In *Advanced Concepts for Intelligent Vision Systems*, Auckland, New Zealand, February 2020.
- 2019 Thanh Tuan Nguyen, Thanh Phuong Nguyen, Frédéric Bouchara, and Ngoc-Son Vu. Volumes of Blurred-Invariant Gaussians for Dynamic Texture Classification. In *Computer Analysis of Images and Patterns (CAIP)*, Salerno, Italy, September 2019.
- 2019 Thanh Tuan Nguyen, Thanh Phuong Nguyen, and Frédéric Bouchara. SMOOTH-INVARIANT GAUSSIAN FEATURES FOR DYNAMIC TEXTURE RECOGNITION. In *ICIP*, Taipei, Taiwan, September 2019.
- 2019 Thanh Phuong Nguyen. PROJECTION BASED APPROACH FOR REFLECTION SYMMETRY DETECTION. In *ICIP*, Taipei, Taiwan, September 2019.
- 2018 Thanh Tuan Nguyen, Thanh Phuong Nguyen, Frédéric Bouchara, and Xuan Son Nguyen. Directional Beams of Dense Trajectories for Dynamic Texture Recognition. In *ACIVS*, Poitiers, France, September 2018.
- 2017 Frederic Bouchara, Thanh Tuan NGUYEN, Thanh Phuong Nguyen, and Frédéric Bouchara. Completed local structure patterns on three orthogonal planes for dynamic texture recognition. In *2017 Seventh International Conference on Image Processing Theory, Tools and Applications (IPTA)*, Montreal, France, November 2017. IEEE.
- 2016 Fabio Martinez, Antoine Manzanera, Michèle Gouiffès, and Thanh Phuong Nguyen. Action-centric polar representation of motion trajectories for online action recognition. In *International Joint Conference on Computer Vision Theory and Applications*, Rome, Italy, January 2016.
- 2015 Thanh Phuong Nguyen and Antoine Manzanera. Noise Tolerant Descriptor for Texture Classification. In *International Conference on Image Processing Theory, Tools and Applications IPTA'15*, Orléans, France, November 2015.
- 2015 Antoine Manzanera and Thanh Phuong Nguyen. Transformées de Hough denses : un cadre efficace et générique pour la reconnaissance de formes paramétrées. In *Traitement et Analyse de l'Information : Méthodes et Applications TAIMA'15*, Hammamet, Tunisia, May 2015.
- 2014 Thanh Phuong Nguyen, Antoine Manzanera, and Walter G. Kropatsch. Impact of topology-related attributes from Local Binary Patterns on texture classification. In *ECCV Workshop on Computer Vision with Local Binary Patterns Variants*, volume 8926, Zürich, Switzerland, September 2014.
- 2014 Thanh Phuong Nguyen and Antoine Manzanera. Incorporating two first order moments into LBP-based operator for texture categorization. In *ACCV Workshop: Robust local descriptors for computer vision*, Singapour, Singapore, November 2014.
- 2012 Thanh Phuong Nguyen and Isabelle Debled-Rennesson. Décomposition d'une courbe discrète en arcs de cercle et segments de droite. In *RFIA 2012 (Reconnaissance des Formes et Intelligence Artificielle)*, pages 978–2–9539515–2–3, Lyon, France, January 2012. Session "Posters".
- 2011 Thanh Phuong Nguyen and Bertrand Kerautret. Ellipse detection through decomposition of circular arcs and line segments. In *International Conference on Image Analysis and Processing*, page xxx, Ravenna, Italy, September 2011.
- 2011 Thanh Phuong Nguyen and Isabelle Debled-Rennesson. Decomposition of a curve into arcs and line segments based on dominant point detection. In *Scandinavian Conference on Image Analysis - SCIA 2011*, Ystad Saltsjöbad, Sweden, May 2011.
- 2011 Thanh Phuong Nguyen and Isabelle Debled-Rennesson. Arc segmentation in linear time. In *14th International Conference on Computer Analysis of Images and Patterns - CAIP 2011*, page 8, Seville, Spain, August 2011.

- 2011 Bertrand Kerautret, Jacques-Olivier Lachaud, and Thanh Phuong Nguyen. Circular arc reconstruction of digital contours with chosen Hausdorff error. In Debled-Rennesson, I.; Domenjoud, E.; Kerautret, B.; Even, and P., editors, *Discrete Geometry for Computer Imagery*, volume 6607 of *LNCS*, pages 250–262, Nancy, France, April 2011. Springer.
- 2010 Thanh Phuong Nguyen, Bertrand Kerautret, Isabelle Debled-Rennesson, and Jaques Oliver Lachaud. Unsupervised, Fast and Precise Recognition of Digital Arcs in Noisy Images. In *International Conference on Computer Vision and Graphics*, pages 59–68, Varsovie, Poland, September 2010.
- 2010 Thanh Phuong Nguyen and Isabelle Debled-Rennesson. Segmentation en arcs discrets en temps linéaire. In *Reconnaissance de formes et Intelligence artificielle*, Caen, France, January 2010.
- 2010 Thanh Phuong Nguyen and Isabelle Debled-Rennesson. Circularity measuring in linear time. In *20th International Conference on Pattern Recognition - ICPR 2010*, pages 2098–2101, Isatanbul, Turkey, August 2010.
- 2010 Thanh Phuong Nguyen and Isabelle Debled-Rennesson. A multiscale approach to decompose a digital curve into meaningful parts. In *20th International Conference on Pattern Recognition - ICPR 2010*, pages 1072–1075, Isatanbul, Turkey, August 2010.
- 2009 Thanh Phuong Nguyen and Isabelle Debled-Rennesson. Parameter-free method for polygonal representation of the noisy curves. In *International Workshop on Combinatorial Image Analysis*, pages 65–78, Mexico, November 2009. RPS.
- 2009 Thanh Phuong Nguyen and Isabelle Debled-Rennesson. Fast and robust dominant point detection on digital curves. In *International Conference on Image Processing*, pages 953–956, Caire, Egypt, November 2009.
- 2008 Thanh Phuong Nguyen and Isabelle Debled-Rennesson. Curvature and torsion estimators for 3D curves. In George Bebis et al., editor, *4th International Symposium on Advances in Visual Computing - ISVC 2008*, volume 1 of *Lecture Notes in Computer Science*, pages 688–699, Las Vegas, United States, December 2008. Springer Verlag.
- 2007 Thanh Phuong Nguyen and Isabelle Debled-Rennesson. Curvature estimation in noisy curves. In Martin Kampel et Allan Hanbury Walter G. Kropatsch, editor, *Computer Analysis of Images and Patterns 12th International Conference, CAIP 2007, Vienna, Austria, August 27-29, 2007. Proceedings*, volume 4673 of *Lecture Notes in Computer Science*, pages 474–481, Vienna, Austria, August 2007. Springer Berlin / Heidelberg. ISBN 978-3-540-74271-5.