David Tran-Thanh NGO

+33 (0) 6 51 97 70 98
david-tran-thanh.ngo@sixense-group.com
david-tran-thanh-ngo-43801749
32 years old, French citizenship

Education

2012–2015 **PhD Degree in Image Processing**, *ICube Lab, University of Strasbourg*, Strasbourg, France.
- Thesis title: "Shadow/Vegetation and Building Detection from single optical remote sensing image".
- Supervisor: Christophe Collet, Professor and Vincent Mazet, Associate Professor, Université de Strasbourg.

2011–2012 **Master Degree**, *IMT Atlantique (ex-Télécom Bretagne)*, Brest, France.
- Speciality: Signal, Image, Embedded Systems and Automatics - option Image (SISEA-I).
- Grade: excellent (17.31/20).

2010–2012 **Engineering Degree**, *IMT Atlantique (ex-Télécom Bretagne)*, Brest, France.

2006–2010 **Engineering Student**, *HoChiMinh City University of Technology*, Vietnam.
Training program for engineers of excellence in Vietnam.

Professional Experience

April. 2019–Now **Computer Vision/Machine Learning R&D Engineer**, *Sixense Mapping, Sixense Group, filiale de Vinci Construction*, région de Grenoble, France.
- R&D Engineer in charge of computer vision/machine learning at ScanLab (an excellence center for Vinci Construction).
- Specific tasks: development of a novel algorithm for automatic detection of accropodes from point cloud, development of deep learning-based defects detection (of civil structures such as building concrete crack, concrete spalling, ...) from orthophoto using Convolutional Neural Networks.

Jan. 2016–March 2019 **Image Processing/Machine Learning R&D Engineer**, *CEA Cadarache*, France.
- Working program: conception and development of a software platform for the exploitation of infrared thermography in nuclear fusion devices (WEST tokamak and W7-X stellarator).
- Specific tasks: algorithm design (deep learning for object detection) and programming (Python, Tensorflow, OpenCV) for thermal event detection and tracking, development of the visual GUI application of the system (C++ with Qt library).

Oct. 2012–Sept. 2015 **Image Processing R&D Engineer**, *ICube Lab, Group Models Image Vision*, Strasbourg, France.
- Topic 1: shadow and vegetation detection from VHR optical imagery
- Topic 2: building detection from VHR aerial imagery using shadow and image segmentation
- Research skill developed: statistical analysis, Markov model, Bayesian inference, Dempster-Shafer evidence theory, pattern recognition, graph cuts, technical paper writing.

Oct. 2012–Sept. 2015 **Teaching Assistant**, *Télécom Physique Strasbourg* , France.
- Image processing with Matlab programming
- Numerical Analysis and C programming
- Signal Processing
- Statistics

Apr.–Sept. 2012 **Signal Processing Engineer Intern**, *Ifremer, Brest and CLS, Toulouse* , France.
- Topic: analysis of individual migration movements of the European sea bass by data mining with electronic tagging
- Research skills developed: statistical analysis, Markov model.

Skills

Coding C/C++ (OpenCV, Qt), Python (TensorFlow, Keras, Scikit-learn, Numpy, Scipy, Pandas), Matlab.

Languages French (Fluent), English (Fluent), Vietnamese (Native Speaker).

Awards, Fellowships and Grants

- Odon Vallet Scholarship (for the most excellent students in Vietnam), 2005 and 2006
- Second prize in National Mathematics Olympic of Vietnam (for high-school students, 2005, 2006)
- Second prize in Vietnam Mathematics Competition for University Students (2008)
- Vietnamese Government Scholarship (2010)
- EUROFusion Engineering Grant (2016-2018)

Scientific Publications

- Marcin Jakubowski, Peter Drewelow, Joris Fellinger, Aleix Puig Sitjes, Glen Wurden, Adnan Ali, Christoph Biedermann, Barbara Cannas, Didier Chauvin, Marc Gamradt, Henry Greve, Yu Gao, Dag Hathiramani, Ralf König, Axel Lorenz, Victor Moncada, Holger Niemann, **Tran Thanh Ngo**, Fabio Pisano, Thomas Sunn Pedersen, W7-XTeam, "Infrared imaging systems for wall protection in the W7-X stellarator", Review of Scientific Instruments, Volume: 89, Issue: 10, 2018.
- A. Puig Sitjes, M. Jakubowski, A. Ali, P. Drewelow, F. Pisano, V. Moncada, **T.T. Ngo**, B. Cannas, J.M. Travere, G. Kocsis, T. Szepesi and W7-X Team, "Wendelstein 7-X Near Real-time Image Diagnostic System for Plasma Facing Components Protection", Fusion Science and Technology, Volume: 74, Issue: 1-2, 2018.
- **TT. Ngo**, Ch. Collet, V. Mazet, "Shape-based Building Detection in Visible Band Images using Shadow Information", IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, Volume: 10, Issue: 3, March 2017.
- Mathieu Woillez, Ronan Fablet, **Tran-Thanh Ngo**, Maxime Lalire, Pascal Lazure, Hélène de Pontual, "A HMM-based model to geolocate pelagic fish from high-resolution individual temperature and depth histories: European sea bass as a case study", Ecological Modelling, 2016-02 , Vol. 321 , P. 10-22.
- **TT. Ngo**, Ch. Collet, V. Mazet, "Détection simultanée de l'ombre et la végétation sur des images aériennes couleur en haute résolution", Traitement du Signal, Vol. 32(2-3):311-333, 2015.
- **TT. Ngo**, Ch. Collet, V. Mazet, "Automatic rectangular building detection from VHR aerial imagery using shadow and image segmentation", International Conference on Image Processing ICIP'15
- **TT. Ngo**, Ch. Collet, V. Mazet, "MRF and Dempster-Shafer theory for simultaneous shadow/vegetation detection on high resolution aerial color images", International Conference on Image Processing ICIP'14.
- **TT. Ngo**, Ch. Collet, V. Mazet, "Détection simultanée de l'ombre et la végétation sur des images aériennes couleur en haute résolution", RFIA 2014, Rouen, 2014.
- Hélène de Pontual, **Tran-Thanh Ngo**, Maxime Lalire, Pascal Lazure, François Garren, Mickaël Drogou, Mathieu Woillez, Ronan Fablet, "Understanding the spatial dynamics of European sea bass: new insights on seasonal migration patterns from electronic tagging off the coast of west Brittany", ICES Annual Science Conference 2013, Iceland.
- M. Woillez, R. Fablet, **T.T. Ngo**, M. Lalire, P. Lazure, F. Garren, H. de Pontual, "A HMM-based model to geolocate pelagic fish from high-resolution individual temperature and depth histories: European sea bass as a case study", 5th Bio-logging Scientific Symposium, BLS5, 2014, France.

Patents

- **David Tran-Thanh NGO**, Natacha ROBERT, Elisabeth GARDON, "Détection et suivi de blocs préfabriqués dans les nuages de points", *pending registration by Soletanche Freyssinet*.