

# Hai Son Le

Computer and Informatics Engineer  
Ph.D. Computer Science

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## Professional Experiences

- 2013–2015 **Researcher**, *Institute of Information Technology (IOIT), Vietnam Academy of Science and Technology (VAST)*, Vietnam.
- 2015 **Content Based Image Retrieval (CBIR) Project**, *IOIT, VAST*, Vietnam, Building a CBIR system in the collaboration project with Linguistic Modeling Department, Institute of Information and Communication Technologies, Bulgarian Academy of Sciences.  
Good performance
- 2014 **Gesture Recognition with Kinect Project**, *IOIT, VAST*, Vietnam, Building a system that uses Kinect to recognize gestures for controlling TV with Infrared signals.  
Good performance
- 2013 **Automatic Speech Recognition(ASR) and Statistical Machine Translation (SMT) Projects**, *IOIT, VAST*, Vietnam, Building an ASR system (English) and SMT systems (French-English) for International Workshop on Spoken Language Translation (IWSLT) 2013.  
Good performance
- 2010–2013 **SMT Projects**, *Laboratoire d'Informatique et de Mécanique pour les Sciences de l'Ingénieur (LIMSI), Université Paris-Sud*, Orsay, France, Building SMT systems (English-French, French-German... ) for IWSLT, Workshop on Statistical Machine Translation (WMT) and Quaero - a European Research and Development Program).  
In top 3 rankings among teams of Carnegie Mellon, Karlsruhe, Aachen, Edinburgh, Stanford...
- 2011 **Kaggle Competition Project**, *LIMSI, Université Paris-Sud*, Orsay, France, Building a system based on semi-supervised feature learning with constructed kernels from combinations of non-linear weak rankers for Kaggle competition on Semi-Supervised Feature Learning Challenge 2011.  
Second and third rankings
- 2009 **Internship**, *LIMSI, Université Paris-Sud*, Orsay, France.  
Subject : Modélisation du langage dans un espace continu  
Supervisors : Alexandre Allauzen and François Yvon
- 2006–2008 **Internship**, *Department of Pattern Recognition and Knowledge Engineering, IOIT, VAST*, Vietnam.  
Subject: Vietnamese Digits Automatic Speech Recognition  
Supervisor : Chi-Mai Luong

## Education

- 2009–2013 **Ph.D. Computer Science**, *Laboratoire d'Informatique et de Mécanique pour les Sciences de l'Ingénieur (LIMSI), Université Paris-Sud*, Orsay, France.  
Thesis : Continuous Space Models with Neural Network in Natural Language Processing  
Supervisors: Alexandre Allauzen and François Yvon  
Rapporteurs: Laurent Besacier and Holger Schwenk  
Examineurs: Yoshua Bengio and Hermann Ney and Michèle Sebag

- 2008–2009 **Master of Research (Master 2 Recherche) MVA (Mathématiques / Vision / Apprentissage)**, *Ecole Normale Supérieure de Cachan, Cachan, France, Mention très bien (high honors)*.
- 2003–2008 **Engineer Diploma**, *Faculty of Information Technology, Hanoi University of Technology, Hanoi, Vietnam, High honors*.
- 2000–2003 **High School Diploma**, *Hanoi – Amsterdam High School, specialty Mathematics, Hanoi, Vietnam, High honors*.
- 2002 **Prize in the 2002 National Mathematical Olympiad**, Hanoi, Vietnam.

## Skills and Qualifications

Programming languages	C, C++, JavaScript, Python, Perl, Matlab
Development framework	Qt, Apache Cordova
Operating systems	Linux family, e.g., CentOS, Ubuntu; Android
Languages	Vietnamese: Mother tongue French: good communication skills (oral, written) English: good communication skills (oral, written)

## Research Fields

Natural Language Processing	Language Modeling Statistical Machine Translation Automatic Speech Recognition
Computer Vision	Object Recognition Image Segmentation Deformable Models
Machine Learning	Graphical Models Neural Network with Deep Learning Reinforcement Learning Kernel Methods

## Master of Research Courses

- Apprentissage par Renforcement (Reinforcement Learning), Remi Munos, 14/20
- Modèles Graphiques Probabilistes (Probabilistic Graphical Model), Francis Bach, 19/20
- Reconnaissance d'Objets et Vision Artificielle (Object Recognition and Computer Vision), Jean Ponce, 19/20
- Modèles déformables en analyse d'images (Deformable Models in Image Analysis), Laurent Cohen, 18/20
- Statistical Pattern Analysis with Applications, Donald German - Yali Amit, 16.8/20
- Méthodes à noyau pour l'apprentissage (Statistical Machine Learning with Kernel Methods), Jean-Philippe Vert, 17/20
- Imagerie sous-pixellique (Sub-pixel Image Processing), Lionel Moisan, 14/20
- Traitement du signal sonore, analyse temps-fréquence (Sound Signal Processing, Time-Frequency Analysis), Emmanuel Bacry, 16/20

## Publications

In 2015:

- Van-Hieu Vu, **Hai-Son Le**, Olga Kanishcheva, Galia Angelova. Fine tuning SIMPLE based Content

Based Image Retrieval system. In *Proceedings of the Sixth International Symposium on Information and Communication Technology*, 2015.

In 2014:

- **Hai-Son Le**, Ngoc-Quan Pham, Duc-Dung Nguyen. Neural Networks with Hidden Markov Models in Skeleton-Based Gesture Recognition. In *Proceedings of the Sixth International Conference on Knowledge and Systems Engineering*, 2014.
- Ngoc-Quan Pham, **Hai-Son Le**, Duc-Dung Nguyen, Truong-Giang Ngo. A Study of Feature Combination in Gesture Recognition with Kinect. In *Proceedings of the Sixth International Conference on Knowledge and Systems Engineering*, 2014.

In 2013:

- Alexandre Allauzen, Nicolas Pécheux, Quoc Khanh Do, Marco Dinarelli, Thomas Lavergne, Aurélien Max, **Hai-Son Le**, François Yvon. LIMSIS@WMT13. In *Proceedings of the Eighth Workshop on Statistical Machine Translation*, 2013.
- Ngoc-Quan Pham, **Hai-Son Le**, Tat-Thang Vu, Chi-Mai Luong. The Speech Recognition and Machine Translation System of IOIT for IWSLT 2013. In *Proceedings of the Tenth International Workshop on Spoken Language Translation (IWSLT)*, Heidelberg, Germany, 2013.
- **Hai-Son Le**, Ilya Oparin, Alexandre Allauzen, Jean-Luc Gauvain, and François Yvon. Structured Output Layer Neural Network Language Models for Speech Recognition. In *IEEE Transactions on Audio, Speech and Language Processing* VOL. 21, NO. 1, January 2013.

In 2012:

- **Hai-Son Le**, Alexandre Allauzen, and François Yvon. Continuous space translation models with neural networks. In *Proceedings of the 2012 Conference of the North American Chapter of the Association for Computational Linguistics on Human Language Technology (NAACL)*, Montréal, Canada, 2012.
- **Hai-Son Le**, Alexandre Allauzen, and François Yvon. Measuring the influence of long range dependencies with neural network language models. In *Proceedings of the NAACL-HLT 2012 Workshop: Will We Ever Really Replace the N-gram Model? On the Future of Language Modeling for HLT*, Montréal, Canada, 2012.
- **Hai-Son Le**, Thomas Lavergne, Alexandre Allauzen, Marianna Apidianaki, Li Gong, Aurélien Max, Artem Sokolov, Guillaume Wisniewski, and François Yvon. LIMSIS @ WMT12. In *Proceedings of the Seventh Workshop on Statistical Machine Translation*, Montréal, Canada, 2012.

In 2011:

- Artem Solokov, Tanguy Urvoy, and **Hai-Son Le**. Low-dimensional feature learning with kernel construction. In *Proceedings of the NIPS 2011 Workshop on Deep Learning and Unsupervised Feature Learning*, Granada, Spain, 2011.
- Thomas Lavergne, Alexandre Allauzen, **Hai-Son Le**, and François Yvon. LIMSIS's experiments in domain adaptation for IWSLT11. In *Proceedings of the 8th International Workshop on Spoken Language Translation (IWSLT)*, San Francisco, CA, 2011.
- Alexandre Allauzen, Gilles Adda, Hélène Bonneau-Maynard, Josep M. Crego, **Hai-Son Le**, Aurélien Max, Adrien Lardilleux, Thomas Lavergne, Artem Sokolov, Guillaume Wisniewski, and François Yvon. LIMSIS @ WMT11. In *Proceedings of the 6th Workshop on Statistical Machine Translation (WMT)*, Edinburgh, Scotland, 2011.
- **Hai-Son Le**, Ilya Oparin, Abdel. Messaoudi, Alexandre Allauzen, Jean-Luc Gauvain, and François Yvon. Large vocabulary SOUL neural network language models. In *Proceedings of the 12th Annual Conference of the International Speech Communication Association (Interspeech)*, Florence, Italy, 2011.
- **Hai-Son Le**, Ilya Oparin, Alexandre Allauzen, Jean-Luc Gauvain, and François Yvon. Structured output layer neural network language model. In *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Prague, Czech, 2011.

In 2010:

- Alexandre Allauzen, Josep M. Crego, Ilknur Durgar El-Kahlout, **Hai-Son Le**, Guillaume Wisniewski, and François Yvon. LIMSIS @ IWSLT 2010. In *Proceedings of the seventh International Workshop on Spoken Language Translation (IWSLT)*, Paris, France, 2010.

- **Hai-Son Le**, Alexandre Allauzen, Guillaume Wisniewski, and François Yvon. Training continuous space language models: Some practical issues. In *Proceedings of the 2010 Conference on Empirical Methods on Natural Language Processing (EMNLP)*, Cambridge, MA, 2010.  
In 2008:
- Tat-Thang Vu, Tang-Khanh Nguyen, **Hai-Son Le**, Chi-Mai Luong. Vietnamese tone recognition based on Multi-layer Perceptron network. In *Proceedings of the 2008 Conference of Oriental Chapter of the International Coordinating Committee on Speech Database and Speech I/O system (Oriental COCOSDA)*, Kyoto, Japan, 2008.
- Quang-Trung Bui, Chi-Mai Luong, **Hai-Son Le**. A lexical tree based search network in continuous Vietnamese Speech Recognition. In *Proceedings of the 2008 Conference of Oriental Chapter of the International Coordinating Committee on Speech Database and Speech I/O system (Oriental COCOSDA)*, Kyoto, Japan, 2008.

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## Hobbies

Sport    Football  
Music    Classic, Rock, Folk  
Reading and    Novel, poem  
Writing