Nam Tuan Ly

Assistant Professor, Tokyo University of Agriculture and Technology, Japan
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Education

Ph.D., Computer Science, 2021
Tokyo University of Agriculture and Technology, Tokyo, Japan
Dissertation: *Handwritten Text Recognition by Deep Neural Networks*
Supervisor: **Masaki Nakagawa, Prof. Ph.D.** and **Keiko Kaneko, Prof. Ph.D.**

M.A., Computer Science, 2018
Tokyo University of Agriculture and Technology, Tokyo, Japan
Dissertation: *Segmentation-free Offline Handwritten Japanese Text Recognition by Deep Neural Networks*
Supervisor: **Masaki Nakagawa, Prof. Ph.D.**

B.A., Computer Science, 2013
Hanoi University of Science and Technology, Hanoi, Vietnam
Supervisor: **Nguyen Kim Khanh, Ph.D.**

Teaching Experience

Teaching Assistant, 10/2016 ~ 9/2018
Department of Computer and Information Sciences
Tokyo University of Agriculture and Technology, Japan
Courses: Pattern Recognition and Machine Learning, System Production Experiments

Research and Work Experience

Postdoctoral Researcher, 11/2021~03/2023
Digital Content and Media Sciences Research Division
National Institute of Informatics, Tokyo, Japan
Subject: *Table Analysis*
Supervisors: **Atsuhiro Takasu, Prof. Ph.D.**

Research and Development (Part-time), 4/2016 ~ 9/2021
iLab Company, Tokyo, Japan
Subject: *Improve and develop offline handwritten Japanese text recognition engine*

Research Assistant, 10/2016 ~ 9/2021
Department of Computer and Information Sciences
Tokyo University of Agriculture and Technology, Tokyo, Japan
Subject: *Offline handwritten Japanese recognition and Japanese historical document recognition by Deep Neural Networks*

Supervisors: **Masaki Nakagawa, Prof. Ph.D.**

Joint Research with Hitachi, Ltd., 10/2019 ~ 03/2020, and 10/2020 ~ 03/2021
Hitachi Central Research Laboratory, Hitachi, Ltd., Tokyo, Japan
Subject: *Deep Neural Networks for offline handwritten Japanese text recognition*

Visiting Researcher, 10/2019 ~ 12/2019
Centre for Pattern Recognition and Machine Intelligence, Computer Science and Software Engineering
Concordia University, Quebec, Canada
Subject: *Hand-Drawn Object Detection for Scoring Wartegg Zeichen Test (ICPRAI'20)*
Supervisors: **Ching Y. Suen, Prof. PhD.**

Research Student, 4/2016 ~ 9/2016
Department of Computer and Information Sciences
Tokyo University of Agriculture and Technology, Japan
Supervisors: **Masaki Nakagawa, Prof. Ph.D.**

System Engineer, 9/2013 ~ 3/2016
Dimage Share Inc., Tokyo, Japan
System Engineer

Journal Publications

1. **N. T. Ly**, K. C. Nguyen, C. T. Nguyen, and M. Nakagawa, "Recognition of Anomalously Deformed Kana Sequences in Japanese Historical Documents," IEICE Transactions on Information and Systems Vol.E102-D, No.8, pp.1554-1564, August 2019.
2. **N. T. Ly**, C. T. Nguyen, and M. Nakagawa, "An attention-based row-column encoder-decoder model for text recognition in Japanese Historical Documents," Pattern Recognition Letters, Vol. 136, pp. 134-141, August 2020 (**Q1, IF 4.757**).

Conference Publications

1. **N. T. Ly**, and A. Takasu, "An End-to-End Local Attention Based Model for Table Recognition," In Proceedings of the 17th International Conference on Document Analysis and Recognition, California, USA, 2023 (**To appear**).
2. **N. T. Ly**, and A. Takasu, "An End-to-End Multi-Task Learning Model for Image-based Table Recognition," In Proceedings of the 18th International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications - VISIGRAPP, Lisbon, Portugal, 2023 (**Oral presentation**).
3. **N. T. Ly**, A. Takasu, P. Nguyen and H. Takeda, "Rethinking Image-based Table Recognition Using Weakly Supervised Methods," In Proceedings of the 12th International Conference on Pattern Recognition Applications and Methods - ICPRAM, Lisbon, Portugal, 2023.
4. **N. T. Ly**, T. T. Ngo, and M. Nakagawa, "A Self-Attention based Model for Offline Handwritten Text Recognition", In Proceedings of the 6th Asian Conference on Pattern Recognition (ACPR 2021), Jeju Island, South Korea, 2021 (**Oral presentation**).
5. **N. T. Ly**, H. T. Nguyen, and M. Nakagawa, "2D Self-Attention Convolutional Recurrent Network for Offline Handwritten Text Recognition," In Proceedings of the 16th IAPR International Conference on Document Analysis and Recognition (ICDAR 2021), Lausanne, Switzerland, 2021 (**Oral presentation**).
6. T. T. Ngo, H. T. Nguyen, **N. T. Ly**, and M. Nakagawa, "Recurrent neural network transducer for Japanese and Chinese offline handwritten text recognition", In Proceedings of the 16th IAPR

International Conference on Document Analysis and Recognition (ICDAR 2021), Lausanne, Switzerland, 2021 (**Oral presentation**).

7. **N. T. Ly**, C. T. Nguyen, and M. Nakagawa, "Attention Augmented Convolutional Recurrent Network for Handwritten Japanese Text Recognition," In Proceedings of the 17th International Conference on Frontiers of Handwriting Recognition (ICFHR 2020), Dortmund, Germany, 2020 (**Oral presentation**).
8. **N. T. Ly**, L. Liu, C. Y. Suen and M. Nakagawa, "Hand-drawn Object detection for scoring Wartegg Zeichen Test", In Proceedings of the 2nd International Conference on Pattern Recognition and Artificial Intelligence (ICPRAI 2020), Zhongshan City, China, 2020 (**Oral presentation**).
9. **N. T. Ly**, C. T. Nguyen, and M. Nakagawa, "An attention-based end-to-end model for multiple text lines recognition in Japanese Historical Documents," In Proceedings of the 15th IAPR International Conference on Document Analysis and Recognition (ICDAR 2019), 2019 (**Oral presentation**).
10. A. D. Le, D. Mochihashi, K. Masuda, H. Mima, and **N. T. Ly**, "Recognition of Japanese historical text lines by an attention-based encoder-decoder and text line generation," In Proceedings of the 5th International Workshop on Historical Document Imaging and Processing (HIP 2019) (**Oral presentation**).
11. **N. T. Ly**, C. T. Nguyen, and M. Nakagawa, "Training an End-to-end Model for Offline Handwritten Japanese Text Recognition by Generated Synthetic Patterns," In Proceedings of the 16th International Conference on Frontiers in Handwriting Recognition (ICFHR 2018), Niagara Falls, USA, 2018 (**Oral presentation**).
12. **N. T. Ly**, C. T. Nguyen, K. C. Nguyen, and M. Nakagawa, "Deep Convolutional Recurrent Network for Segmentation-free Offline Handwritten Japanese Text Recognition," In Proceedings of the 6th International Workshop on Multilingual OCR (MOCR 2017), Kyoto, Japan, 2017 (**Oral presentation**).
13. H. T. Nguyen, **N. T. Ly**, K. C. Nguyen, C. T. Nguyen, and M. Nakagawa, "Attempts to recognize anomalously deformed Kana in Japanese historical documents," In Proceedings of the 4th International Workshop on Historical Document Imaging and Processing (HIP 2017), Kyoto, Japan, 2017 (**Oral presentation**).
14. H. D Nguyen, **N. T. Ly**, H. Truong, and D. D Nguyen, "Multi-Column CNNs for skeleton-based human gesture recognition," In Proceedings of the 9th International Conference on Knowledge and Systems Engineering (KSE 2017), Hue, Vietnam, 2017 (**Oral presentation**).
15. 耒代誠仁, **Nam Tuan Ly**, Kha Cong Nguyen, 中川正樹, 山本和明, "階層化された情報システムのためのくずし字解読機能の試作,"日本情報考古学会第 42 回大会, 岡山大学津島キャンパス, 2019.
16. 佐藤旭、小林心、**Nam Tuan Ly**、Cuong Tuan Nguyen、北本朝展、中川正樹、"日本古典籍くずし字文書の文字列認識 、 "第119回人文科学とコンピュータ研究会発表会、大阪市、02/2019.

Preprints

1. **N. T. Ly**, P. Nguyen, H. Takeda, A. Takasu, "TabIQA: Table Questions Answering on Business Document Images," arXiv:2303.14935 [cs.CV], 2023.

Awards and Honors

Awards

- ICDAR2023 Competition on Visual Question Answering on Business Document Images, **Runner-up**, 2023.
- The 16th International Conference on Frontiers in Handwriting Recognition, Aug 2018, Nominees for best student paper award.

- Tokyo University of Agriculture and Technology, **President's Award for Students**, Apr 2018.
- The Special Interest Group of Computers and the Humanities (Information Processing Society of Japan), "Recognizing anomalously deformed Kana by Deep Convolutional Recurrent Network", **PRMU CH Award**, 2018.
- The Special Interest Group of Pattern Recognition and Media Understanding (The Institute of Electronics, Information and Communication Engineers, Japan), The 21st PRMU Algorithm Contest, **Best Algorithm Award**, 2017.
- The 4th International Workshop on Historical Document Imaging and Processing (HIP2017), **The IAPR Best Paper Award**, 2017.

Scholarship

- JIRITSU, Apr 2016 ~ Mar 2017.
- Hirose International Scholarship Foundation, Apr 2017 ~ Sep 2021.

Travel grants

- National Institute of Informatics (NII), Sydney, Australia, Sep 2019.
- National Institute of Informatics (NII), Hakodate, Hokkaido, Jan 2018.

Conferences and Training

Conferences:

ICDAR, Japan, 2017.
ICFHR, USA, 2018.
ICDAR, Australia, 2019.
ICPRAI, China, 2020.
ICFHR, Germany, 2020.
ICDAR, Switzerland, 2021.
ICPRAM, Portugal, 2023.
VISIGRAPP, Portugal, 2023.
ICDAR, USA, 2023.

Academic Services

PC Member:

- The 17th International Conference on Document Analysis and Recognition, 2023.
- The 4th workshop on Intelligent Cross-Data Analysis and Retrieval, ICMR 2023.
- ICCCI 2020 Special Session on Deep Learning and Applications for Industry 4.0.

Review:

- Expert Systems with Applications (Journal).
- Pattern Recognition (Journal).
- International Journal on Document Analysis and Recognition (IJDAR).

Sub-reviewer:

- IEEE Transactions on Pattern Analysis and Machine Intelligence (Journal).
- Pattern Recognition Letter (Journal).
- IJCAI (2021).
- ICDAR (2017, 2019, 2021).
- ICFHR (2018, 2020)
- HIP (2017, 2019, 2021).

Relevant Skills

Computing skills

- Python, Matlab, C/C++, C#, Java, PHP, Assembly (MIPS).
- TensorFlow, PyTorch
- Windows, MacOs, Ubuntu, Latex.

Language skills

- Vietnamese, native speaker
- English, good
- Japanese, good

Other skills

- Machine Learning, Deep Learning, Algorithms.
- Strong background on mathematics.
- Teamwork and presentation.

References

Prof. Masaki Nakagawa
Dept. of Computer and Information Sciences
Tokyo Univ. of Agri. & Tech.
E-mail: nakagawa@cc.tuat.ac.jp
http://www.tuat.ac.jp/~nakagawa/

Prof. Atsuhiro Takasu
Digital Content and Media Sciences Research Division, National Institute of Informatics, Japan
E-mail: takasu@nii.ac.jp
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Prof. Ching Yee Suen
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Concordia University, Canada
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