Ye Kyaw THU

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RESEARCH INTERESTS

My research interests lie in natural language processing (NLP) and human-computer interaction (HCI). Currently, mainly working on machine translation (MT), automatic speech recognition (ASR) and text to speech (TTS) for low resource languages, but am also interested in other areas such as language acquisition for robot and artificial intelligence (AI). I have a deep interest in machine learning in general and its application to education.

EDUCATION

GRADUATE SCHOOL OF INFORMATION AND TELECOMMUNICATIONS STUDIES, WASEDA UNIVERSITY, TOKYO, JAPAN
4/2006–10/2011

DOCTOR OF SCIENCE

GRADUATE SCHOOL OF INFORMATION AND TELECOMMUNICATIONS STUDIES, WASEDA UNIVERSITY, TOKYO, JAPAN
4/2004–3/2006

MASTER OF SCIENCE

DAGON UNIVERSITY, MYANMAR *6/1993–12/2000*

BACHELOR OF SCIENCE (PHYSICS)

KMD, YANGON, MYANMAR *6/1998–12/2000*

DIPLOMA CONFERRED: INTERNATIONAL ADVANCED DIPLOMA IN COMPUTER STUDIES (UK)

KMD, YANGON, MYANMAR *6/1997-6/1998*

DIPLOMA CONFERRED: INTERNATIONAL DIPLOMA IN COMPUTER STUDIES (UK)

SCHOLARSHIP

ATSUMI SCHOLARSHIP, JAPAN *3/2010-4/2011*

JAPANESE GOVERNMENT SCHOLARSHIP (MONBUKAGAKUSHO:MEXT) *4/2006-3/2009*

IMAIZUMI MEMORIAL BURMESE SCHOLARSHIP FOUNDATION, JAPAN *4/2004-3/2006*

CENTRE OF THE INTERNATIONAL COOPERATION FOR COMPUTERISATION (CICC), JAPAN *1/2002-3/2002*

WORK EXPERIENCE

NATIONAL ELECTRONIC AND COMPUTER TECHNOLOGY CENTER (NECTEC) *1/2019-Present/Pathumthani, Thailand*

VISITING PROFESSOR

CAMBODIA ACADEMY OF DIGITAL TECHNOLOGY (CADT) *5/2022-Present/Phnom Penh, Cambodia*

AFFILIATE PROFESSOR

YANGON TECHNOLOGICAL UNIVERSITY (YTU) *12/2018-2/2021/Yangon, Myanmar*

VISITING PROFESSOR

UNIVERSITY OF TECHNOLOGY (YATANARPON CYBER CITY)) *3/2017–Present / Pyin Oo Lwin, Myanmar*

VISITING PROFESSOR

LANGUAGE UNDERSTANDING LAB. *5/2019–Present / Pyin Oo Lwin, Myanmar*

LAB LEADER

DEPARTMENT OF APPLIED MATHEMATICS, GITI, WASEDA UNIVERSITY *4/2012–3/2021 / Tokyo, Japan*

VISITING RESEARCHER

BAGAN INNOVATION TECHNOLOGY *11/2018–10/2019 / Yangon, Myanmar*

TECHNICAL ADVISOR

OKAYAMA PREFECTURAL UNIVERSITY *9/2016–3/2018 / Okayama Prefecture, Japan*

RESEARCHER

MULTILINGUAL TRANSLATION LAB., UNIVERSAL COMMUNICATION RESEARCH INSTITUTE, NICT *4/2012–3/2016 / Kyoto, Japan*

RESEARCHER

GLOBAL INFORMATION AND TELECOMMUNICATION STUDIES (GITS), WASEDA UNIVERSITY *4/2009–3/2012 / Tokyo, Japan*
RESEARCH ASSOCIATE

GRAVITON SOFTWARE DEVELOPMENT TEAM *1/2000–6/2002 / Yangon, Myanmar*
FOUNDER/LECTURER

KMD COMPANY LTD. *5/1998–11/1999 / Yangon, Myanmar*
PROJECT MANAGER

SKILLS

PROGRAMMING LANGUAGES	**Experienced:** Pascal	C	C^{++}	Visual Basic	Assembly **Using:** Perl	Bash	Python
FRAMEWORKS EXPERIENCED	**MT:** Moses	Sockeye	Marian	Fairseq	OpenNMT	OpenFST	PyTorch	Tensorflow
	ASR: HTK Toolkit	Kaldi-ASR	ESPnet
	TTS: Ossian	Tacotron	FastSpeech	TensorflowTTS	HiFi-GAN	GAN-TTS	WaveRNN
LANGUAGES	**Native:** Burmese (Myanmar Language) **Fluent:** English, Japanese

COURSES TO HAVE BEEN IN CHARGE OF

1998-2002	*C, C^{++}, Visual Basic*
2000-2002	*Microsoft Office, Operating System*
2016-PRESENT	*Supervising master's and doctoral' theses (including undergraduate internship students)*
2019-PRESENT	*Natural Language Processing R&D*

SELECTED PUBLICATION

- Zun Hlaing Moe, Thida San, Ei Thandar Phyu, Hlaing Myat Nwe, Hnin Aye Thant, Naw Naw, Htet Ne Oo, Thepchai Supnithi, **Ye Kyaw Thu**, *"Myanmar Text (Burmese) and Braille (Mu Thit) Machine Translation Applying IBM Model 1 and 2"*, Journal of Intelligent Informatics and Smart Technology, April 1st Issue, 2021, pp. 18-26
- Ei Phyu Phyu Mon, **Ye Kyaw Thu**, Than Than Yu, Aye Wai Oo, *"SymSpell4Burmese: Symmetric Delete Spelling Correction Algorithm (SymSpell) for Burmese Spelling Checking"*, In Proceedings of the 16th International Joint Symposium on Artificial Intelligence and Natural Language Processing (iSAI-NLP 2021), virtual conference, Dec 21 to Dec 23, 2021, Thailand, pp. 1-6.
- Mya Ei San, **Ye Kyaw Thu**, Zar Zar Hlaing, Hlaing Myat Nwe, Thepchai Supnithi and Sasiporn Usanavasin, *"A Study of Levenshtein Transformer and Editor Transformer Models for Under-Resourced Languages"*, In Proceedings of the 16th International Joint Symposium on Artificial Intelligence and Natural Language Processing (iSAI-NLP 2021), virtual conference, Dec 21 to Dec 23, 2021, Thailand, pp. 1-6.
- Ni Htwe Aung, Honey Htun, **Ye Kyaw Thu**, Su Su Maung *"CRNN Based OCR for American and British Sign Language Fingerspelling"*, In Proceedings of the 13th International Conference on Knowledge and Systems Engineering (KSE 2021), Nov 10-12, 2021, Bangkok, Thailand.
- Zar Zar Hlaing, **Ye Kyaw Thu**, Thazin Myint Oo, Mya Ei San, Sasiporn Usanavasin, Ponrudee Netisopakul and Thepchai Supnithi, *"NECTEC's Participation in WAT-2021"*, In Proceedings of the 8th Workshop on Asian Translation (WAT2021), Aug 6, 2021, Bangkok, Thailand, pp. 74-82
- Khaing Hsu Wai, **Ye Kyaw Thu**, Swe Zin Moe, Hnin Aye Thant, Thepchai Supnithi, *"Myanmar (Burmese) String Similarity Measures based on Phoneme Similarity"*, Journal of Intelligent Informatics and Smart Technology, April 1st Issue, 2020, pp. 27-34. (submitted December 21, 2019; accepted March 6 2020; revised March 16, 2020; published online April 30, 2020)
- **Thazin Myint Oo**, Ye Kyaw Thu, Khin Mar Soe, Thepchai Supnithi, *"Statistical Machine Translation of Myanmar Dialects"*, Journal of Intelligent Informatics and Smart Technology, April 1st Issue, 2020, pp. 14-26. (Submitted December 21, 2019; accepted March 6, 2020; revised March 18, 2020; published online April 30, 2020) ("the Workshop Paper Award" at the First Joint Myanmar-Thai NLP/AI R&D Workshop, 2019, Chiang Mai, Thailand)
- **Thazin Myint Oo**, Ye Kyaw Thu, and Khin Mar Soe, *"Neural Machine Translation between Myanmar (Burmese) and Rakhine (Arakanese)"*, In Proceedings of the Sixth Workshop on NLP for Similar Languages, Varieties and Dialects, NAACL-2019, June 7th 2019, Minneapolis, United States, pp. 80-88.
- **Ye Kyaw Thu**, Vichet Chea, Yoshinori Sagisaka, *"Comparison of Six POS Tagging Methods on 12K Sentences Khmer Language POS Tagged Corpus"*, In the First Regional Conference on Optical Character Recognition and Natural Language Processing Technologies for ASEAN Languages (ONA 2017), Dec 7-8, 2017, Phnom Penh, Cambodia.
- **Ye Kyaw Thu**, Kenta Takabuchi, Kaisei Fukai, Naoto Iwahashi, Takeo Kunishima, *"Robot Language Acquisition Based on Sequence-to-Sequence Learning"*, In Proceedings of ICCA2017, February 16-17, Yangon, Myanmar, pp. 461-471.
- Chenchen Ding, **Ye Kyaw Thu**, Masao Utiyama, Eiichiro Sumita, *"Word Segmentation for Burmese (Myanmar)"*, ACM Transactions on Asian and Low-Resource Language Information Processing (TALLIP), Volume 15, Issue 4, May 2016, Article No. 22, pp. 22:1-22:10.
- **Ye Kyaw Thu**, Andrew Finch, Eiichiro Sumita, *"Interlocking Phrases in Phrase-based Statistical Machine Translation"*, In Proceedings of the NAACL-HLT 2016, June 12-17, San Diego, US, pp. 1076-1081.

- **Ye Kyaw Thu**, Win Pa Pa, Masao Utiyama, Andrew Finch, Eiichiro Sumita, *"Introducing the Asian Language Treebank (ALT)"*, The 10th edition of the Language Resources and Evaluation Conference (LREC), 23-28 May 2016, Portoroz, Slovenia, pp. 1574-1578.
- **Ye Kyaw Thu**, Andrew Finch, Win Pa Pa, Eiichiro Sumita, *"A Large-scale Study of Statistical Machine Translation Methods for Myanmar Language"*, In Proceedings of SNLP2016, Feb 10-12, 2016, Phranakhon Si Ayutthaya, Thailand.
- **Ye Kyaw Thu**, Win Pa Pa, Jinfu Ni, Yoshinori Shiga, Andrew Finch, Chiori Hori, Hisashi Kawai, Eiichiro Sumita, *"HMM Based Myanmar Text to Speech System"*, In Proceedings of the 16th Anual Conference of the International Speech Communication Association (INTERSPEECH 2015), September 6-10, 2015, Dresden, Germany, pp. 2237-2241.
- **Ye Kyaw Thu**, Andrew Finch, Eiichiro Sumita, Yoshinori Sagisaka, *"Integrating Dictionaries into an Unsupervised Model for Myanmar Word Segmentation"*, Proceedings of the 5th Workshop on South and Southeast Asian NLP (WSSANLP 2014), 25th International Conference on Computational Linguistics (COLING2014), August 23-29, 2014, Dublin, Ireland, pp. 20-27.
- **Ye Kyaw Thu**, Andrew Finch, Eiichiro Sumita, Yoshinori Sagisaka, *"A Purely Monotonic Approach to Machine Translation for Similar Languages"*, In Proceedings of the International Conference on Asian Language Processing 2013 (IALP 2013), Aug 17-19, 2013, Urumqi, China, pp. 107-110.
- **Ye Kyaw Thu**, Ouk Phavy and Yoshiyori URANO, *"Positional Gesture for Advanced Smart Terminals: Simple Gesture Text Input for Syllabic Scripts Like Myanmar, Khmer and Bengla"*, In Proceedings of the first ITU-T Kaleidoscope Academic Conference, May 12-13, 2008, Geneva, Switzerland, pp. 77-84.
- **Ye Kyaw Thu**, *"Positional Prediction: Consonant Cluster Prediction Text Entry Method for Burmese (Myanmar Language)"*, Extended Abstracts of the 26th ACM Conference on Human Factors in Computing Systems (CHI 2008), April 5-10, 2008, Florence, Italy, pp. 3783-3788.
- **Ye Kyaw Thu**, Yoshiyori URANO, *"PP_Clickwheel: Positional Prediction Khmer Text Input Interface with Clickwheel for Small Mobile Devices"*, The Journal of the Institute of Image Electronics Engineers of Japan (IIEEJ), Vol.39, No.5, 2010, pp. 654-662 (published on Sept 2010).
- **Ye Kyaw Thu**, Sai Aung Win Maung and Yoshiyori URANO, *"Direct Keyboard Mapping (DKM) Layout for Myanmar Fingerspelling Text Input (Study with Developed Fingerspelling Font "mmfingerspelling.ttf")"*, GITS/GITI Research Bulletin 2009-2010, Waseda University, pp. 127-135. (published on July 31, 2010).

AWARDS

- Our paper entitled "English to Burmese Machine Translation with Asian Pivot Languages" achieved *"the Best Paper Award"* and also one more paper entitled "Word to Word translation between Myanmar(Burmese) and other Ethnic languages" achieved *"the Best Presentation Award"* at the 3rd Joint Southeast Asian NLP/AI R&D Workshop, 2021 (the publication will be around April 2022)
- Presenter Ms. Ni Htwe Aung achieved the *"Presentation Award"* for the paper entitled "CRNN Based OCR for American and British Sign Language Fingerspelling" at KSE2021, Thailand.
- Our workshop paper "Grapheme-to-IPA Phoneme Conversion for Burmese (myG2P Version 2.0)" achieved *"the Best Paper Award"* at the 2nd Joint Myanmar-Thai NLP/AI R&D Workshop, 2020, Bangkok, Thailand.
- Our conference paper "Statistical Machine Translation for Myanmar Language Paraphrase Generation" achieved *"the Best Paper Award"* at the Track 1: Natural Language Processing (NLP), iSAI-NLP 2020, Bangkok, Thailand.
- Our paper entitled "Statistical Machine Translation of Myanmar Dialects" got *"the Workshop Paper Award"* at the First Joint Myanmar-Thai NLP/AI R&D Workshop, 2019, Chiang Mai, Thailand
- *"Best Paper Award"* for ICCA 2015, "Syllable Pronunciation Features for Myanmar Grapheme to Phoneme Conversion", February 5 6, 2015. (NICT News, No.452 JUN 2015, Page No. 13)
- *"Special Award (Emerging)"* for SNLP 20013, "Unsupervised and Semi-supervised Myanmar Word Segmentation Approaches for Statistical Machine Translation", October 28 30, 2013. (NICT News)
- *Waseda University Grant* for Special Research Projects (Project number: 2011B-215), 2011
- *Waseda University Grant* for Special Research Projects (Project number: 2009A-901), 2009
- *3rd Prize* for ACM Student Research Competition Grand Finals 2009, "Positional Prediction: Common and User Friendly Text Input Interfaces for Asian Syllabic Languages on Mobile Devices", ACM Awards Banquet, San Diego, USA, June 27, 2009
- *Waseda University Expense Stipend*, Student representative to the 9th APRU Doctoral Students Conference, July 14 18, 2008, Vladivostok, Russia
- *Young Author Recognition Certificate* of ITU-T Kaleidoscope Academic Conference, "Positional Gesture for Advanced Smart Terminals: Simple Gesture Text Input for Syllabic Scripts Like Myanmar, Khmer and Bangla", May 12 13, 2008
- *2nd Prize* for ACM Student Research Competition of CHI 2008, "Positional Prediction: Consonant Cluster Prediction Text Entry Method for Burmese (Myanmar Language)", April 5 10, 2008
- *Best Paper Award* for ACM MobileHCI 07, "Positional Mapping Myanmar Text Input Scheme for Mobile Devices", September 9 12, 2007
- *1st Prize* for student project of IDCS Diploma, "Malaysia Airline Reservation System", 1998