

TOMOYUKI KAJIWARA

kajiwara [at] cs.ehime-u.ac.jp ◊ <https://sites.google.com/site/moguranosenshi/>

Graduate School of Science and Engineering, Ehime University

#607, 4th Bldg. of Engineering, Ehime University, 3 Bunkyo-cho, Matsuyama, Ehime 790-8577, Japan

RESEARCH INTERESTS

Natural Language Processing / Computational Linguistics

Especially: Paraphrasing, Text Simplification, Formality Style Transfer, Quality Estimation

POSITION

Assistant Professor

January 2021 - present

Artificial Intelligence Lab., Graduate School of Science and Engineering, Ehime University

Specially-Appointed Assistant Professor

April 2018 - December 2020

Intelligence and Sensing Lab., Institute for Datability Science, Osaka University

EDUCATION

Ph.D. in Engineering

April 2015 - March 2018

Dept. of System Design, Tokyo Metropolitan University

Supervisor: Mamoru Komachi

Thesis: Text Simplification without Simplified Corpora

Ph.D. Thesis Recommended by IPSJ SIGs

B.S. and M.S. in Engineering

April 2011 - March 2015

Dept. of Electrical, Electronics and Information Engineering, Nagaoka University of Technology

Supervisor: Kazuhide Yamamoto

Thesis: Lexical Simplification for Reading Assistance

Department Chair's Award

EXPERIENCE

Visiting Researcher

May 2017 - August 2017

National Institute of Information and Communications Technology (Mentor: Atsushi Fujita)

Visiting Researcher

September 2015 - December 2015

University of Liverpool (Mentor: Danushka Bollegala)

Internship

BrainPad, Inc.

January 2014 - February 2014

Fujitsu Laboratories, Ltd.

October 2012 - February 2013

Editorial Committee

Journal of Natural Language Processing

March 2020 - March 2022

Program Committee

Local Arrangement Chair: SNL-2020

Program Committee: JSAI-2020, JSAI-2019, NLP-2018, YRSNLP-2016, YANS-2016, YANS-2015

Reviewer

AAAI-2021, NAACL-2021, EACL-2021, AACL-2020, IJCAI-2020, ACL-2020, EMNLP-2020, COLING-2020, AACL-2020, ACLSRW-2020, AACL-2020, BEA-2020, ACL-2019, EMNLP-2019, NAACL-2019, PACLIC-2019, NLPTEA-2018, IJCNLP-2017, NLPTEA-2017

GRANTS

- JSPS, Grant-in-Aid for Young Scientists (20K19861)** *April 2020 - March 2024*
Semi-supervised Machine Translation based on Quality Estimation
Principal Investigator: 3,100,000 JPY
- JST, ACT-X (JPMJAX1907)** *October 2019 - March 2022*
Paraphrase Generation for Improving the Performance of Various NLP Applications
Principal Investigator: 4,500,000 JPY
- JST, ACT-I (JPMJPR18UB)** *October 2018 - March 2020*
Personalized Text Generation with Lexical Constraint
Principal Investigator: 4,000,000 JPY
- JSPS, Grant-in-Aid for Research Activity Start-up (18H06465)** *August 2018 - March 2020*
Machine Translation based on Multimodal Quality Estimation
Principal Investigator: 2,100,000 JPY
- JSPS, Grant-in-Aid for Scientific Research (B) (20H04484)** *April 2020 - March 2024*
Scholar2Vec: 研究者の多様な活動情報を埋め込める深層潜在空間の構築
Co-Investigator: 13,900,000 JPY (PI: Marie Katsurai)
- JSPS, Grant-in-Aid for Scientific Research (B) (19H01330)** *April 2019 - March 2023*
Historical Anatomy of Public Opinion Making in Australia: Public Meeting Data Analysis via NLP
Co-Investigator: 13,300,000 JPY (PI: Takao Fujikawa)

PUBLICATIONS

Selected Publications

- Sora Ohashi, Junya Takayama, Tomoyuki Kajiwara, Chenhui Chu and Yuki Arase. **Text Classification with Negative Supervision**. In Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics (ACL 2020), pp.351–357, 2020.
- Tomoyuki Kajiwara, Biwa Miura and Yuki Arase. **Monolingual Transfer Learning via Bilingual Translators for Style-Sensitive Paraphrase Generation**. In Proceedings of the Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI 2020), pp.8042–8049, 2020.
- Tomoyuki Kajiwara. **Negative Lexically Constrained Decoding for Paraphrase Generation**. In Proceedings of the 57th Annual Meeting of the Association for Computational Linguistics (ACL 2019), pp.6047–6052, 2019.
- Tomoyuki Kajiwara and Mamoru Komachi. **Text Simplification without Simplified Corpora**. Journal of Natural Language Processing, Vol.25, No.2, pp.223-249, 2018. (In Japanese)
Best Paper Award
- Hiroki Shimanaka, Tomoyuki Kajiwara and Mamoru Komachi. **RUSE: Regressor Using Sentence Embeddings for Automatic Machine Translation Evaluation**. In Proceedings of the Third Conference on Machine Translation (WMT 18), pp.751-758, 2018.
We ranked 1st in all 7 language pairs of to-English at Metrics Shared Task.
- Tomoyuki Kajiwara and Mamoru Komachi. **Complex Word Identification Based on Frequency in a Learner Corpus**. In Proceedings of the 13th Workshop on Innovative Use of NLP for Building Educational Applications (BEA 13), pp.195-199, 2018.
We ranked 1st in 5 out of 12 tracks at Complex Word Identification Shared Task.
- Tomoyuki Kajiwara and Mamoru Komachi. **Building a Monolingual Parallel Corpus for Text Simplification Using Sentence Similarity Based on Alignment between Word Embeddings**. In Proceedings of the 26th International Conference on Computational Linguistics (COLING 2016), pp.1147–1158, 2016.

Journal Papers

1. Sora Ohashi, Mao Isogawa, Tomoyuki Kajiwara and Yuki Arase. **Compact Word Embeddings Based on Global Similarity.** Journal of Natural Language Processing, Vol.28, No.1, 2021. (In Japanese) (to appear)
2. Tomoyuki Kajiwara, Daiki Nishihara, Tomonori Kodaira and Mamoru Komachi. **Language Resources for Japanese Lexical Simplification.** Journal of Natural Language Processing, Vol.27, No.4, pp.801–824, 2020. (In Japanese)
3. Daiki Nishihara, Tomoyuki Kajiwara and Yuki Arase. **Controllable Text Simplification with Lexical Constraint.** Journal of Natural Language Processing, Vol.27, No.2, pp.189–210, 2020. (In Japanese)
4. Takao Fujikawa, Chenhui Chu, Tomoyuki Kajiwara and Hajime Nagahara. **Use of Big Data in Historical Research: Cases of Australia.** Seiyoshigaku (The Studies in Western History), No.268, pp.50–61, 2019. (In Japanese)
5. Kazuki Ashihara, Tomoyuki Kajiwara, Yuki Arase and Satoru Uchida. **Contextualized Multi-Sense Word Embedding.** Journal of Natural Language Processing, Vol.26, No.4, pp.689–710, 2019. (In Japanese)
6. Hiroki Shimanaka, Tomoyuki Kajiwara and Mamoru Komachi. **Metric for Automatic Machine Translation Evaluation based on Pre-trained Sentence Embeddings.** Journal of Natural Language Processing, Vol.26, No.3, pp.613–634, 2019. (In Japanese)
7. Tomoyuki Kajiwara and Mamoru Komachi. **Text Simplification without Simplified Corpora.** Journal of Natural Language Processing, Vol.25, No.2, pp.223–249, 2018. (In Japanese) **Best Paper Award**
8. Tomoyuki Kajiwara, Danushka Bollegala, Yuichi Yoshida and Ken-ichi Kawarabayashi. **An Iterative Approach for the Global Estimation of Sentence Similarity.** PLOS ONE, Vol.12, No.9, pp.1–15, 2017.
9. Tomoyuki Kajiwara and Kazuhide Yamamoto. **Japanese Lexical Simplification for Children Using Definition Statements.** Journal of Information Processing Society of Japan, Vol.56, No.3, pp.983–992, 2015. (In Japanese)

Refereed Conference Papers

1. Akifumi Nakamachi, Tomoyuki Kajiwara and Yuki Arase. **Text Simplification with Reinforcement Learning using Supervised Rewards on Grammaticality, Meaning Preservation, and Simplicity.** In Proceedings of the ACL-IJCNLP 2020 Student Research Workshop (ACL-IJCNLP 2020 SRW), pp.153–159, 2020. (Acceptance Rate: 51%)
2. Sora Ohashi, Mao Isogawa, Tomoyuki Kajiwara and Yuki Arase. **Tiny Word Embeddings Using Globally Informed Reconstruction.** In Proceedings of the 28th International Conference on Computational Linguistics (COLING 2020), pp.1199–1203, 2020. (Acceptance Rate: 26%)
3. Ryoma Yoshimura, Masahiro Kaneko, Tomoyuki Kajiwara and Mamoru Komachi. **SOME: Reference-less Sub-Metrics Optimized for Manual Evaluations of Grammatical Error Correction.** In Proceedings of the 28th International Conference on Computational Linguistics (COLING 2020), pp.6516–6522, 2020. (Acceptance Rate: 26%)
4. Yuting Zhao, Mamoru Komachi, Tomoyuki Kajiwara and Chenhui Chu. **Double Attention-based Multimodal Neural Machine Translation with Semantic Image Regions.** In Proceedings of the 22nd Annual Conference of the European Association for Machine Translation (EAMT 2020), pp.105–114, 2020. (Acceptance Rate: 53%)

5. Sora Ohashi, Junya Takayama, Tomoyuki Kajiwara, Chenhui Chu and Yuki Arase. **Text Classification with Negative Supervision**. In Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics (ACL 2020), pp.351–357, 2020. (Acceptance Rate: 18%)
6. Yuki Arase, Tomoyuki Kajiwara and Chenhui Chu. **Annotation of Adverse Drug Reactions in Patients’ Weblogs**. In Proceedings of the 12th International Conference on Language Resources and Evaluation (LREC 2020), pp.6771–6778, 2020. (Acceptance Rate: 60%)
7. Daiki Nishihara and Tomoyuki Kajiwara. **Word Complexity Estimation for Japanese Lexical Simplification**. In Proceedings of the 12th International Conference on Language Resources and Evaluation (LREC 2020), pp.3107–3113, 2020. (Acceptance Rate: 60%)
8. Masato Yoshinaka, Tomoyuki Kajiwara and Yuki Arase. **SAPPHIRE: Simple Aligner for Phrasal Paraphrase with Hierarchical Representation**. In Proceedings of the 12th International Conference on Language Resources and Evaluation (LREC 2020), pp.6863–6869, 2020. (Acceptance Rate: 60%)
9. Tomoyuki Kajiwara, Biwa Miura and Yuki Arase. **Monolingual Transfer Learning via Bilingual Translators for Style-Sensitive Paraphrase Generation**. In Proceedings of the Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI 2020), pp.8042–8049, 2020. (Acceptance Rate: 21%)
10. Kazuki Ashihara, Tomoyuki Kajiwara, Yuki Arase and Satoru Uchida. **Contextualized *context2vec***. In Proceedings of the 5th Workshop on Noisy User-generated Text (W-NUT 2019), pp.397–406, 2019. (Acceptance Rate: 65%)
11. Daiki Nishihara, Tomoyuki Kajiwara and Yuki Arase. **Controllable Text Simplification with Lexical Constraint Loss**. In Proceedings of the ACL 2019 Student Research Workshop (ACL 2019 SRW), pp.260–266, 2019. (Acceptance Rate: 36%)
12. Tomoyuki Kajiwara. **Negative Lexically Constrained Decoding for Paraphrase Generation**. In Proceedings of the 57th Annual Meeting of the Association for Computational Linguistics (ACL 2019), pp.6047–6052, 2019. (Acceptance Rate: 18%)
13. Kazuki Ashihara, Tomoyuki Kajiwara, Yuki Arase and Satoru Uchida. **Contextualized Word Representations for Multi-Sense Embedding**. In Proceedings of the 32nd Pacific Asia Conference on Language, Information and Computation (PACLIC 32), pp.28–36, 2018. (Acceptance Rate: 55%)
14. Hiroki Shimanaka, Tomoyuki Kajiwara and Mamoru Komachi. **Metric for Automatic Machine Translation Evaluation based on Universal Sentence Representations**. In Proceedings of the NAACL 2018 Student Research Workshop (NAACL 2018 SRW), pp.106–111, 2018. (Acceptance Rate: 39%)
15. Tomoyuki Kajiwara, Mamoru Komachi and Daichi Mochihashi. **MIPA: Mutual Information Based Paraphrase Acquisition via Bilingual Pivoting**. In Proceedings of the 8th International Joint Conference on Natural Language Processing (IJCNLP 2017), pp.80–89, 2017. (Acceptance Rate: 31%)
16. Tomoyuki Kajiwara and Atsushi Fujita. **Semantic Features Based on Word Alignments for Estimating Quality of Text Simplification**. In Proceedings of the 8th International Joint Conference on Natural Language Processing (IJCNLP 2017), pp.109–115, 2017. (Acceptance Rate: 31%)
17. Yuuki Sekizawa, Tomoyuki Kajiwara and Mamoru Komachi. **Improving Japanese-English Neural Machine Translation by Paraphrasing the Target Language**. In Proceedings of the 4th Workshop on Asian Translation (WAT 2017), pp.64–69, 2017. (Acceptance Rate: ??%)

18. Yui Suzuki, Tomoyuki Kajiwara and Mamoru Komachi. **Building a Non-Trivial Paraphrase Corpus using Multiple Machine Translation Systems.** In Proceedings of the ACL 2017 Student Research Workshop (ACL 2017 SRW), pp.36–42, 2017. (Acceptance Rate: 40%)
19. Tomoyuki Kajiwara and Mamoru Komachi. **Building a Monolingual Parallel Corpus for Text Simplification Using Sentence Similarity Based on Alignment between Word Embeddings.** In Proceedings of the 26th International Conference on Computational Linguistics (COLING 2016), pp.1147–1158, 2016. (Acceptance Rate: 32%)
20. Tomonori Kodaira, Tomoyuki Kajiwara and Mamoru Komachi. **Controlled and Balanced Dataset for Japanese Lexical Simplification.** In Proceedings of the ACL 2016 Student Research Workshop (ACL 2016 SRW), pp.1–7, 2016. (Acceptance Rate: 36%)
21. Tomoyuki Kajiwara and Kazuhide Yamamoto. **Evaluation Dataset and System for Japanese Lexical Simplification.** In Proceedings of the ACL-IJCNLP 2015 Student Research Workshop (ACL 2015 SRW), pp.35–40, 2015. (Acceptance Rate: 31%)
22. Tomoyuki Kajiwara and Kazuhide Yamamoto. **Noun Paraphrasing Based on a Variety of Contexts.** In Proceedings of the 28th Pacific Asia Conference on Language, Information and Computation (PACLIC 28), pp.644–649, 2014. (Acceptance Rate: 46%)
23. Tomoyuki Kajiwara, Hiroshi Matsumoto and Kazuhide Yamamoto. **Selecting Proper Lexical Paraphrase for Children.** In Proceedings of the 25th Conference on Computational Linguistics and Speech Processing (ROCLING 2013), pp.769–772, 2013. (Acceptance Rate: 71%)

System Description Papers

1. Akifumi Nakamachi, Hiroki Shimanaka, Tomoyuki Kajiwara and Mamoru Komachi. **TMUOU Submission for WMT20 Quality Estimation Shared Task.** In Proceedings of the Fifth Conference on Machine Translation (WMT 20), pp.1037-1041, 2020.
We ranked 4th in Pearson and 2nd in MAE/RMSE at QE Shared Task.
2. Sora Ohashi, Tomoyuki Kajiwara, Chenhui Chu, Noriko Takemura, Yuta Nakashima and Hajime Nagahara. **IDSOU at WNUT-2020 Task 2: Identification of Informative COVID-19 English Tweets.** In Proceedings of the 6th Workshop on Noisy User-generated Text (W-NUT 2020), pp.428-433, 2020.
We ranked 16th out of 55 at Shared Task on Identification of Informative COVID-19 English Tweets.
3. Hiroki Shimanaka, Tomoyuki Kajiwara and Mamoru Komachi. **RUSE: Regressor Using Sentence Embeddings for Automatic Machine Translation Evaluation.** In Proceedings of the Third Conference on Machine Translation (WMT 18), pp.751-758, 2018.
We ranked 1st in all 7 language pairs of to-English at Metrics Shared Task.
4. Tomoyuki Kajiwara and Mamoru Komachi. **Complex Word Identification Based on Frequency in a Learner Corpus.** In Proceedings of the 13th Workshop on Innovative Use of NLP for Building Educational Applications (BEA 13), pp.195-199, 2018.
We ranked 1st in 5 out of 12 tracks at Complex Word Identification Shared Task.
5. Masahiro Kaneko, Tomoyuki Kajiwara and Mamoru Komachi. **TMU System for SLAM-2018.** In Proceedings of the 13th Workshop on Innovative Use of NLP for Building Educational Applications (BEA 13), pp.365-369, 2018.
We ranked 4th out of 15 at Shared Task on Second Language Acquisition Modeling.

ArXiv Papers

1. Hiroki Shimanaka, Tomoyuki Kajiwara and Mamoru Komachi. **Machine Translation Evaluation with BERT Regressor**. arXiv:1907.12679, 2019.
2. Tomoyuki Kajiwara, Chihiro Tanikawa, Yuujin Shimizu, Chenhui Chu, Takashi Yamashiro and Hajime Nagahara. **Using Natural Language Processing to Develop an Automated Orthodontic Diagnostic System**. arXiv:1905.13601, 2019.

Domestic Conference Papers 25 oral presentations and 34 poster presentations

AWARDS

Best Paper Award

2019: Journal of Natural Language Processing Vol.25 (Kajiwara and Komachi)

Outstanding Research Award

2016: The 229th IPSJ Natural Language Processing Meeting (Kajiwara and Komachi)

Young Researcher Award

2020: The 26th Annual Meeting of ANLP (Shimanaka, Kajiwara and Komachi)

2020: The 26th Annual Meeting of ANLP (Yamauchi, Kajiwara and Arase)

2019: The 241st IPSJ Natural Language Processing Meeting (Kajiwara, Miura and Arase)

Student Incentive Award

2017: The 231st IPSJ Natural Language Processing Meeting (Kajiwara, Komachi and Mochihashi)

2015: The 77th National Convention of IPSJ (Kajiwara and Yamamoto)

Incentive Award

2018: The 13th NLP Symposium for Young Researchers (Miura, Kajiwara and Arase)

2012: The 7th NLP Symposium for Young Researchers (Kajiwara and Yamamoto)

Sponsor Award

2019: The 14th NLP Symposium for Young Researchers (Ashihara, Kajiwara, Arase and Uchida)

2019: The 14th NLP Symposium for Young Researchers (Yamauchi, Kajiwara and Arase)

Hackathon Award

2018: The 13th NLP Symposium for Young Researchers (Matsuno, Noji, Inoue and Kajiwara)

2015: The 10th NLP Symposium for Young Researchers (Satou and Kajiwara)

Ph.D. Thesis Recommended by IPSJ SIGs

2018: Information Processing Society of Japan

Department Chair's Award

2015: Nagaoka University of Technology