AYANA NIWA

Ph.D. in Engineering / NLP Researcher

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RESEARCH AND WORK EXPERIENCE

Visiting Scientist
RIKEN Center for Advanced Intelligence Project (AIP)　　📅 May. 2025 –　　📍 Tokyo, Japan

Researcher
MBZUAI　　📅 Oct. 2024 –　　📍 Abu Dhabi, UAE

Research Scientist
Megagon Labs, Recruit Co., Ltd.　　📅 Apr. 2023 – Sep. 2024　　📍 Tokyo, Japan

- Job Description: dialogue systems, task ambiguity

Researcher
Tokyo Institute of Technology　　📅 June 2023 – Sep. 2024　　📍 Tokyo, Japan

- Research Theme: Prompt optimization, non-autoregressive generation

JSPS Research Fellow (DC2)
Japan Society for the Promotion of Science　　📅 Apr. 2021 – Mar. 2023　　📍 Tokyo, Japan

- Research Theme: Structuring templates and acquiring lexical knowledge for text generation

Internship and Outsourced Business
Megagon Labs, Recruit Co., Ltd　　📅 June 2019 – Mar. 2023　　📍 Tokyo, Japan

- Research Theme: Sentiment analysis

EDUCATION

Tokyo Institute of Technology
Ph.D. Student in Computer Science
📅 Apr. 2020 – Mar. 2023　　　　📍 Tokyo, Japan

Tokyo Institute of Technology
M.S. in Computer Science
📅 Apr. 2018 – Mar. 2020　　　　📍 Tokyo, Japan

Sophia University
B.S. in Science Information
📅 Apr. 2014 – Mar. 2018　　　　📍 Tokyo, Japan

PUBLICATIONS AND PRESENTATIONS

📄 **Journal**

- <u>A. Niwa</u>, S. Takase, and N. Okazaki, "Nearest Neighbor Non-autoregressive Text Generation," *Journal of Information Processing*, vol. 31, pp. 344–352, 2023. DOI: 10.2197/ipsjjip.31.344.
- <u>A. Niwa</u>, N. Okazaki, K. Wakimoto, K. Nishiguchi, and M. Mouri, "Construction of a Corpus of Rhetorical Devices in Slogans and Structural Analysis of Antitheses," *ACM Trans. Asian Low-Resour. Lang. Inf. Process.*, vol. 20, no. 6, 2021, ISSN: 2375-4699. DOI: 10.1145/3465218.

📄 International Conferences

- <u>A. Niwa</u>, M. Kaneko, and K. Inui, "Rectifying belief space via unlearning to harness LLMs' reasoning," in *Findings of the Association for Computational Linguistics: ACL 2025*, W. Che, J. Nabende, E. Shutova, and M. T. Pilehvar, Eds., Vienna, Austria: Association for Computational Linguistics, 2025, pp. 25 060–25 075, ISBN: 979-8-89176-256-5. DOI: 10.18653/v1/2025.findings-acl.1285.
- <u>A. Niwa</u> and H. Iso, "AmbigNLG: Addressing task ambiguity in instruction for NLG," in *Proceedings of the 2024 Conference on Empirical Methods in Natural Language Processing*, Y. Al-Onaizan, M. Bansal, and Y.-N. Chen, Eds., Miami, Florida, USA: Association for Computational Linguistics, 2024, pp. 10 733–10 752. DOI: 10.18653/v1/2024.emnlp-main.599.
- M. Kaneko, S. Takase, <u>A. Niwa</u>, and N. Okazaki, "Interpretability for Language Learners Using Example-Based Grammatical Error Correction," in *Proceedings of the 60th Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*, S. Muresan, P. Nakov, and A. Villavicencio, Eds., Dublin, Ireland: Association for Computational Linguistics, 2022, pp. 7176–7187. DOI: 10.18653/v1/2022.acl-long.496.
- <u>A. Niwa</u>, K. Nishiguchi, and N. Okazaki, "Predicting Antonyms in Context using BERT," in *Proceedings of the 14th International Conference on Natural Language Generation*, Aberdeen, Scotland, UK: Association for Computational Linguistics, 2021, pp. 48–54. DOI: 10.18653/v1/2021.inlg-1.6.

📄 Under Review

- R. Koike, M. Kaneko, <u>A. Niwa</u>, P. Nakov, and N. Okazaki, *Exagpt: Example-based machine-generated text detection for human interpretability*, 2025. arXiv: 2502.11336 `[cs.CL]`.

📄 Article

- <u>A. Niwa</u>, S. Yokoi, J. Takayama, and I. Saito. (2024). "NLP Colloquium.," [Online]. Available: https://www.jstage.jst.go.jp/article/jnlp/31/1/31_300/_article/-char/en.

👥 Domestic Conferences and Symposiums

- R. Miyazato, <u>A. Niwa</u>, K. Inui, and K. Harada, "Verification of Temporal Reasoning Abilities of Language Models in Nonlinear Narratives"," in *the 20th Young Researcher Association for NLP Studies Symposium 2025 (YANS2025)*, Shizuoka, 2025.
- <u>A. Niwa</u>, M. Kaneko, and K. Inui, "Rectifying Belief Space via Unlearning to Harness LLMs' Reasoning," in *Proceedings of the 39th Annual Conference of the Japanese Society for Artificial Intelligence (JSAI2025)*, 2025. DOI: 10.11517/pjsai.JSAI2025.0_2Win550 [**JSAI Annual Conference Award** 🎗].
- R. Koike, M. Kaneko, <u>A. Niwa</u>, P. Nakov, and N. Okazaki, "Exagpt: Example-based machine-generated text detection for improving interpretability," in *Proceedings of the 39th Annual Conference of the Japanese Society for Artificial Intelligence (JSAI2025)*, vol. JSAI2025, 2025, 3Win589–3Win589. DOI: 10.11517/pjsai.JSAI2025.0_3Win589.
- T. Shiotani, M. Kaneko, <u>A. Niwa</u>, Y. Maruyama, D. Oba, M. Ohi, and N. Okazaki, "Adversarial benchmark for evaluating stereotypes in japanese culture," in *Proceedings of the 39th Annual Conference of the Japanese Society for Artificial Intelligence (JSAI2025)*, vol. JSAI2025, 2025, 3Win512–3Win512. DOI: 10.11517/pjsai.JSAI2025.0_3Win512 [**JSAI Annual Conference Award** 🎗].
- <u>A. Niwa</u> and H. Iso, "Addressing Ambiguity in Instruction for NLG," in *the 30th Annual Meeting of the Association of Natural Language Processing (NLP2024)*, Hyogo, Japan, 2024 [**Young Researcher's Encouragement Award** 🎗].
- <u>A. Niwa</u> and N. Okazaki, "Investigating the Effectiveness of Neighbor Distributions in the Pretrained Model T5," in *the 29th Annual Meeting of the Association of Natural Language Processing (NLP2023)*, Okinawa, Japan, 2023.
- D. Taniguchi, K. Wakimoto, <u>A. Niwa</u>, and N. Okazaki, "Testing for Dependence on the Direction of Sentence Generation in Large Language Models," in *the 29th Annual Meeting of the Association of Natural Language Processing (NLP2023)*, Okinawa, Japan, 2023.
- <u>A. Niwa</u>, S. Takase, and N. Okazaki, "Non-autoregressive Generation using the Nearest Neighbor," in *the 28th Annual Meeting of the Association of Natural Language Processing (NLP2022)*, Online, 2022 [**Special Committee Award** 🎗].

- R. Ishikawa, **A. Niwa**, M. Sakae, and N. Okazaki, "Robust Dependency Parsing for the Omission of a Post-positional Particle using Pseudo Training Data," in *the 28th Annual Meeting of the Association of Natural Language Processing (NLP2022)*, Online, 2022.
- **A. Niwa** and H. Matsuda, "A Study for Sentiment Analysis Accepting the Diverse of Emotion Sensitivities," in *Proceedings of the 35th Annual Conference of the Japanese Society for Artificial Intelligence (JSAI2021)*, 2021. DOI: 10.11517/pjsai.JSAI2021.0_2Yin506.
- **A. Niwa**, K. Nishiguchi, and N. Okazaki, "Antonym Prediction in Context with BERT," in *the 27th Annual Meeting of the Association of Natural Language Processing (NLP2021)*, Online, 2021.
- N. Nobori, T. Hiraoka, **A. Niwa**, K. Nishiguchi, and N. Okazaki, "Advertisement Slogan Generation Considering Company Information," in *the 27th Annual Meeting of the Association of Natural Language Processing (NLP2021)*, Online, 2021.
- **A. Niwa**, K. Wakimoto, K. Nishiguchi, M. Mouri, and N. Okazaki, "Antithesis structure analysis in slogan using span candidate refinement with word correspondence," in *Proceedings of the 34th Annual Conference of the Japanese Society for Artificial Intelligence (JSAI2020)*, 2020. DOI: 10.11517/pjsai.JSAI2020.0_1E5GS901.
- **A. Niwa**, K. Nishiguchi, and N. Okazaki, "Slogan Generation with Antitheses Structure with Masked Language Models," in *the 15th Young Researcher Association for NLP Studies Symposium 2020 (YANS2020)*, Online, 2020.
- N. Nobori, T. Hiraoka, **A. Niwa**, N. Okazaki, K. Wakimoto, K. Kuroda, and K. Nishiguchi, "Advertisement Slogan Generation Considering company information," in *the 15th Young Researcher Association for NLP Studies Symposium 2020 (YANS2020)*, Online, 2020.
- **A. Niwa**, K. Wakimoto, K. Nishiguchi, M. Mouri, and N. Okazaki, "Analysis of Antitheses Structure in Advertisement Slogan," in *the 26th Annual Meeting of the Association of Natural Language Processing (NLP2020)*, Ibaraki, Japan, 2020.
- **A. Niwa**, N. Okazaki, K. Nishiguchi, C. Kameyama, and M. Mouri, "A Study toward Automatic Advertisement Slogan Generation Considering Rhetorical Devices," in *the 14th Young Researcher Association for NLP Studies Symposium 2019 (YANS2019)*, Sapporo, Japan, 2019.
- ——, "Analysis for Advertisement Slogan Generation," in *the 25th Annual Meeting of the Association of Natural Language Processing (NLP2019)*, Nagoya, Japan, 2019.

AWARDS

JSAI 2025 Annual Conference Awards (one as first author, one as co-author)
📅 Mar. 2025

NLP 2024 Young Researcher's Encouragement Award (18/427)
📅 Mar. 2024   🌐 Website

NLP 2022 Committee Special Award (16/365)
📅 Mar. 2022   🌐 Website

2021 Microsoft Research Asia Fellowship: Nomination Award
📅 Nov. 2021   🌐 Website

COMMITTEE

SIG-NL Committee
📅 Apr. 2025 –   🌐 Website

Editorial Committee
📅 Apr. 2025 –   🌐 Website

JSAI Planning Committee
📅 May 2024 –   🌐 Website

INLG2024 Local Organizer
📅 2024   🌐 Website

NLP2024 Executive Committee
📅 2024   🌐 Website

NLP Colloquium

📅 June 2021 –　　　　　　　　　　　　　　🌐 Website

NLP Study Group for Doctoral Students Organizer
📅 Dec. 2020 – Mar. 2023　　　　　　　　🌐 Website

Young Researcher Association for NLP Studies (YANS) Commitee
📅 Mar. 2020 – Mar. 2022　　　　　　　　🌐 Website

INVITED TALKS

A Quick Overview to Unlock the Potential of LLMs through Prompt Engineering.
📅 Aug. 2024　　　　　📍 Advanced Natural Language Processing (NLP) by Tokyo AI

The Frontiers of Mathematics, Information, and AI
📅 Nov. 2022　　　　　📍 Online Seminar for middle and high-school female students by AIP RIKEN

Career Path as a Female Researcher
📅 Nov. 2021　　　　　📍 NeurIPS Meetup Japan 2021, Women in Machine Learning (WiML)

Derivation and Use of Templates in Natural Language Generation
📅 Nov. 2021　　　　　📍 Special Interest Group on Fundamental Problems in Artificial Intelligence (SIG-FPAI)

Trends in Natural Language Processing at NeurIPS 2019
📅 Mar. 2020　　　　　📍 The 78th AI Seminar: AI Trends and Top Conferences debriefing session (NeurIPS2019) by JSAI

A Smart Computer that Understands Language
📅 Nom. 2019　　　　　📍 Jissen Gakuen Senior High School, Tokyo

Natural Language Processing
📅 June 2019　　　　　📍 Denenchofu High School, Tokyo

SCHOLARSHIP, FELLOWSHIP, AND GRANTS-IN-AID

Research Fellowship for Young Scientists by Japan Society for the Promotion of Science (JSPS)
4,800,000 JPY / APPROX 45,000 USD
📅 Apr. 2021 — Mar. 2023

- The most prestigious fellowship for Ph.D. students in Japan [Acceptance Rate < 20%]

Grant-in-Aid for JSPS Fellows: Research Grant (Grant Number: 21J13602 🔗)
1,500,000 JPY / APPROX 13,500 USD
📅 Apr. 2021 — Mar. 2023

NeurIPS 2019 Participation Support by the Japanese Society for Artificial Intelligence (JSAI) 🔗
Full support of travel expense and registration fees
📅 Dec. 2019

Tsubame Scholarship for Doctoral Students by Tokyo Institute of Technology 🔗
480,000 JPY / APPROX 4,300 USD
📅 Apr. 2020 — Mar. 2021