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AYANA NIWA

Ph.D. Student in Computer Science

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EDUCATION

Tokyo Institute of Technology

Ph.D. Student in Computer Science

Apr. 2020 – Tokyo, Japan

- Advised by Naoaki Okazaki.
- Main Research Topic : **Language Generation with Nearest Neighbors or Templates**

Tokyo Institute of Technology

M.S. in Computer Science

Apr. 2018 – Mar. 2020 Tokyo, Japan

- Advised by Naoaki Okazaki.
- Thesis : **Corpus Construction and Structural Analysis of Antitheses Focusing on Rhetorical Devices of Advertisement Slogan**

Sophia University

B.S. in Science Information

Apr. 2014 – Mar. 2018 Tokyo, Japan

- Advised by Takashi Irohara.
- Thesis : **Facility Location Problem Considering the Quality of Education in Developing Countries**
  - Focused on mathematical optimization/modeling, operational research, and production engineering.
- Also learned **educational curriculum and method**

RESEARCH AND WORK EXPERIENCE

JSPS Research Fellow

JSPS Research Fellowships for Young Scientists (DC2) Apr. 2021 – Tokyo, Japan

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

Internship and Outsourced Business

Megagon Labs, Recruit Co., Ltd June 2019 – Tokyo, Japan

- Currently working with the development team of GiNZA , which is an open source Japanese NLP library.
- Research Theme: Sentiment analysis

Collaborative Research

CyberAgent, Inc. Sep. 2018 – Tokyo, Japan

- Currently working on the **Slogan Generation task**. We focus on the rhetorical devices to generate interesting slogans that attract customers.

Research Assistant

Tokyo Institute of Technology Apr. 2018 – Tokyo, Japan

- Antonym prediction in the context
- Analysis and generation of rhetorical devices
- Corpus construction using crowdsourcing services

After school tutor

NeEds Inc. Mar. 2015 – Mar. 2017 Tokyo, Japan

- Taught maths and English at a private tutoring school

After school tutor

Kawaijuku Group Apr. 2014 – Mar. 2018 Tokyo, Japan

- Taught maths and worked as teaching assistant of summer classes at a private tutoring school

PUBLICATIONS AND PRESENTATIONS

Journal Articles

- **Niwa, A.**, Okazaki, N., Wakimoto, K., Nishiguchi, K., & Mouri, M. (2021). Construction of a Corpus of Rhetorical Devices in Slogans and Structural Analysis of Antitheses. *ACM Transactions on Asian and Low-Resource Language Information Processing (TALLIP)*, *20*(6).

International Conferences

- **Niwa, A.**, Nishiguchi, K., & Okazaki, N. (2021b). Predicting Antonyms in Context using BERT. *Proceedings of the 14th international conference on natural language generation (inlg2021)*, Association for Computational Linguistics, (to appear).

Domestic Conferences and Symposiums

- **Niwa, A.**, & Matsuda, H. (2021). A Study for Sentiment Analysis Accepting the Diverse of Emotion Sensitivities. In *The 35th annual conference of the japanese society for artificial intelligence, 2020 (jsai2021)*, Online. Retrieved from https://www.jstage.jst.go.jp/article/pjsai/JSAI2021/0/JSAI2021_2Yin506/_article/-char/ja/
- **Niwa, A.**, Nishiguchi, K., & Okazaki, N. (2021a). Antonym Prediction in Context with BERT. In *27th annual meeting of the association of natural language processing (nlp 2021)* (pp. 1702–1707). Kitakyushu, Japan / Online. Retrieved from https://www.anlp.jp/proceedings/annual_meeting/2021/pdf_dir/C9-1.pdf
- Nobori, N., Hiraoka, T., **Niwa, A.**, Nishiguchi, K., & Okazaki, N. (2021). Advertisement Slogan Generation Considering Company Information. In *27th annual meeting of the association of natural language processing (nlp 2021)* (pp. 450–454). Kitakyushu, Japan / Online. Retrieved from https://www.anlp.jp/proceedings/annual_meeting/2021/pdf_dir/B3-3.pdf
- **Niwa, A.**, Nishiguchi, K., & Okazaki, N. (2020). Slogan Generation with Antitheses Structure with Masked Language Models. In *The 15th young researcher association for nlp studies symposium 2020 (yans2020)*, Online.
- **Niwa, A.**, Wakimoto, K., Nishiguchi, K., Mouri, M., & Okazaki, N. (2020a). Analysis of Antitheses Structure in Advertisement Slogan. In *26th annual meeting of the association of natural language processing (nlp 2020)* (pp. 601–604). Ibaraki, Japan. Retrieved from https://www.anlp.jp/proceedings/annual_meeting/2020/pdf_dir/D3-4.pdf
- **Niwa, A.**, Wakimoto, K., Nishiguchi, K., Mouri, M., & Okazaki, N. (2020b). Antithesis structure analysis in slogan using span candidate refinement with word correspondence. In *The 34th annual conference of the japanese society for artificial intelligence, 2020 (jsai2020)*. doi:10.11517/pjsai.JSAI2020.0_1E5GS901
- Nobori, N., Hiraoka, T., **Niwa, A.**, Okazaki, N., Wakimoto, K., Kuroda, K., & Nishiguchi, K. (2020). Advertisement Slogan Generation Considering company information. In *The 15th young researcher association for nlp studies symposium 2020 (yans2020)*, Online.
- **Niwa, A.**, Okazaki, N., Nishiguchi, K., Kameyama, C., & Mouri, M. (2019a). A Study toward Automatic Advertisement Slogan Generation Considering Rhetorical Devices. In *The 14th young researcher association for nlp studies symposium 2019 (yans2019)* (p. 63). Sapporo, Japan.
- **Niwa, A.**, Okazaki, N., Nishiguchi, K., Kameyama, C., & Mouri, M. (2019b). Analysis for Advertisement Slogan Generation. In *25th annual meeting of the association of natural language processing (nlp2019)* (pp. 558–561). Nagoya, Japan. Retrieved from https://www.anlp.jp/proceedings/annual_meeting/2019/pdf_dir/P3-12.pdf

ORGANIZER

NLP Colloquium

June 2021 – Website

- An event held mainly every two weeks, inviting people who are working on the latest research and development in Natural Language Processing (NLP) and Computational Linguistics (CL)

NLP Study Group for Doctoral Students Organizer

Dec. 2020 – Website

- A study group for NLP students at Doctoral courses for the research discussion
- Holding the group four times a year

Young Researcher Association for NLP Studies (YANS) Commitee

Mar. 2020 – Mar. 2022 Website

- An association for students and young researchers to promote the progress of their research
- Planning and organizing the symposium held every summer

INVITED TALKS

The 78th AI Seminar: AI Trends and Top Conferences debriefing session (NeurIPS2019) by JSAI

Mar. 2020 Tokyo, Osaka

- Published a slide titled “Trends in Natural Language Processing at NeurIPS 2019. ” (in Japanese)

A visiting lecture entitiled “A Smart Computer that Understands Language”

Nom. 2019 Jissen Gakuen Senior High School, Tokyo

A visiting lecture entitiled “Natural Language Processing”

June 2019 Denenchofu High School, Tokyo

SCHOLARSHIP, FELLOWSHIP, AND GRANTS-IN-AID

Research Fellowship for Young Scientists

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**

1,500,000 JPY / APPROX 13,500 USD

Apr. 2021 — Mar. 2023

- Grant Number: 21J13602

NeurIPS 2019 Participation Support

Full support of travel expense and registration fees

Dec. 2019

- Received by the Japanese Society for Artificial Intelligence (JSAI)

Tokyo Tech Tsubame Scholarship for Doctoral Students

480,000 JPY / APPROX 4,300 USD

Apr. 2020 — Mar. 2021

- Received by Tokyo Institute of Technology

OTHERS

Teaching Assistant

- Machine Learning 2020 4Q

Qualifications

- Certificate in teaching Mathematics at a high school level

Skills

Python | C/C++ | Html/Javascript | Linux-Bash | Pytorch | Git | Adobe Illustrator