Akio Hayakawa

PH. D STUDENT IN UNIVERSITAT POMPEU FABRA, BARCELONA, SPAIN

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Short Introduction

- **Ph. D student** in Universitat Pompeu Fabra, Spain.
- Working on **Automatic Text Simplification** and **Question Answering**.
- With Master's degree in Education, also interested in the application of **NLP for education**.
- Currently **seeking an internship or part-time position**.

Education

Universitat Pompeu Fabra   *Barcelona, Spain*
PhD Student in Computer Science   *Oct 2023 -*

Nara Institute of Science and Technology   *Nara, Japan*
PhD Student in Engineering (Withdrawal)   *Apr 2023 - Sep 2023*

Nara Institute of Science and Technology   *Nara, Japan*
Master's degree in Engineering   *Apr 2021 - Mar 2023*

University of Tokyo   *Tokyo, Japan*
Master's degree in Education   *Apr 2015 - Mar 2017*

University of Tokyo   *Tokyo, Japan*
Bachelor's degree in Education   *Apr 2011 - Mar 2015*

Selected Publications

★ Text Simplification   ⬢ Dataset Creation   📖 Question Answering   🤖 Large Language Models   🌐 Multiple Languages

★ 🤖 [5] **Akio Hayakawa**, Nouran Khallaf, Serge Sharoff, Horacio Saggion. 2025. *UoL-UPF at TSAR 2025 Shared Task: A Generate-and-Select Approach for Readability-Controlled Text Simplification*. TSAR 2025.
Paper Summary: Described systems for the shared task on readability-controlled paragraph simplification, one of which **achieved the 2nd place** among 48 participation.
Contribution: Experiment Design, Code Implementation, Team Management, Paper Writing

★ 🤖 🌐 [4] **Akio Hayakawa**, Stefan Bott, Horacio Saggion. 2025. *Towards Trustworthy Lexical Simplification: Exploring Safety and Efficiency with Small LLMs*. INLG 2025.
Paper Summary: Established and validated a **lightweight lexical simplification framework across 5 languages** tailored to the typical resource-constrained environments encountered in real-world applications.
Contribution: Experiment Design, Data Preparation, Code Implementation, Annotation Design, Paper Writing

📖 🤖 [3] **Akio Hayakawa** and Horacio Saggion. 2024. *Can LLMs Solve Reading Comprehension Tests as Second Language Learners?*. KiL 2024.
Paper Summary: Explored the ability of LLMs to **replicate second language learners' responses** to reading comprehension questions.
Contribution: Experiment Design, Code Implementation, Paper Writing

★ ⬢ 🌐 [2] Matthew Shardlow, Fernando Alva-Manchego, Riza Theresa Batista-Navarro, Stefan Bott, Saul Calderon Ramirez, Rémi Cardon, Thomas François, **Akio Hayakawa**, Andrea Horbach, Anna Huelsing, Yusuke Ide, Joseph Marvin Imperial, Adam Nohejl, Kai North, Laura Occhipinti, Nelson Peréz Rojas, Nishat Raihan, Tharindu Ranasinghe, Martin Solis Salazar, Marcos Zampieri, Horacio Saggion. 2024. *The BEA 2024 Shared Task on the Multilingual Lexical Simplification Pipeline*. BEA 2024.
Paper Summary: Reported the findings of the **shared task on lexical complexity prediction and lexical simplification** leveraging the newly released MultiLS dataset.
Contribution: Japanese Dataset Design, Data Collection, Annotation Collection

★ ⬢ [1] **Akio Hayakawa**, Tomoyuki Kajiwara, Hiroki Ouchi, Taro Watanabe. 2022. *JADES: New Text Simplification Dataset in Japanese Targeted at Non-Native Speakers*. TSAR-2022.

Paper Summary: Created a **Japanese sentence simplification dataset** targeted at non-native speakers, accompanied by an analysis and a baseline system.
Contribution: Experiment Design, Data Preparation, Annotation Collection, Exploratory Data Analysis, Code Implementation, Paper Writing

Work Experience

Universitat Pompeu Fabra
Barcelona, Spain

Pre-Doctoral Researcher
Dec 2023 -

- Working on Text Simplification and Question Answering.
- Joined a project funded by Horizon Europe, which aims to support people with disabilities by addressing the language barriers.
- Served as a teaching assistant for undergrad courses in programming and NLP.
- **Technical Skills:** PyTorch, Transformers, llama.cpp, OpenAI, LangChain.

Nara Institute of Science and Technology
Nara, Japan

Research Assistant
Apr 2023 - Sep 2023

- Worked on Text Simplification and Question Answering.
- Mentored Master's students in experimental design and coding.
- **Technical Skills:** PyTorch, Transformers, LaTeX.

Freelance
Nara, Japan

Machine Learning Engineer
Feb 2021 - Aug 2023

- Established cloud-to-cloud migration systems for large data using Google Cloud Data Fusion and AWS Glue as a mid-level data engineer.
- **Technical Skills:** Python with PyTorch, NumPy, Matplotlib, Pandas, Scikit-learn, GCP, AWS.

BrainPad Inc.
Tokyo, Japan

Software Engineer, Machine Learning Engineer
Jan 2019 - Jan 2021

- Built a near real-time action recognition system using pre-trained deep learning models on the AWS environment as a lead engineer in a five-person team.
- Analyzed tabular data as a proof of concept for introducing AI models.
- Regularly explained the trends in machine learning simply enough for laypersons to understand.
- **Technical Skills:** Python with PyTorch, Keras, NumPy, Matplotlib, Pandas, Scikit-learn, Tableau, GCP, Azure, AWS.

Subsidiary of NTT
Tokyo, Japan

Software Engineer
Apr 2017 - Dec 2018

- Built an automated system for replying to emails by combination of a text classification model and the robotic process automation.
- **Technical Skills:** Python, NumPy, Pandas, Scikit-learn, Matplotlib, Flask, Java, Spring Framework, VBA, Postgres, SQL, Git.

Achievements

Jun 2020 AWS Certified Solutions Architect - Associate *(Expired)*
Jun 2019 Google Cloud Certified Professional Data Engineer *(Expired)*
Dec 2018 Kaggle Competition Master

Professional Services

Organization TSAR 2025, Shared Task of BEA 2024
Review ACL Rolling Review (2025 Feb-, with multiple Great Reviews), TSAR (2024, 2025)
Conference Volunteer KDD2024, UAI 2024

Languages

English Fluent
Japanese Native
Spanish Basic