

Ryosuke Yamaki

Ph.D. Student in Information Science and Engineering at Ritsumeikan University

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About

I am currently a doctoral student in the Graduate School of Information Science and Engineering at Ritsumeikan University, where I am conducting research on natural language processing and computer vision using deep learning. Within the field of natural language processing, I specialize in syntactic parsing, and my current work involves fundamental research on integrating syntactic parsing techniques with large language models and image generation models. In my research, I aim to realize human-specific cognitive functions (e.g., creative aspects of natural language) using computers, and I am also strongly interested in applying natural language processing and other deep learning-related technologies to actual social problems and business.

Research and Work Experience

Technical Assistant | Kyoto University  Apr 2024 - present

Technical assistant related to research activities, including management of computing resources and networks in Taniguchi Lab, Graduate School of Informatics, Kyoto University.

Researcher | ProPlace Inc.  Oct 2022 - present

Lead research in Natural Language Processing and Computer Vision related to the advertisement domain.

Research Assistant | Ritsumeikan University Apr 2022 - Mar 2024

Research assistance on integration of natural language and real-world information with deep generative models.

Teaching Assistant | Ritsumeikan University Apr 2021 - present

Teaching assistance for classes on probability, statistics, and machine learning.

Internship | Caspar.AI  Aug 2018 - Sep 2018

Work related to installation and configuration of AI smart home systems in residential buildings.

Education

Ritsumeikan University | Ph.D. Eng. Apr 2023 - present

- Major: Computer Science and Engineering
- Supervisor: Prof. Nobutaka Shimada and Prof. Tadahiro Taniguchi

- Conducting research on natural language processing, syntactic parsing, and image generation.

Ritsumeikan University | M. Eng.

Apr 2021 - Mar 2023

- Major: Computer Science and Engineering
- Supervisor: Prof. Tadahiro Taniguchi
- Grade: Overall GPA: 3.87/4.00
- Graduated top of the class and class representative.
- Conducted research on natural language processing and syntactic parsing.

Ritsumeikan University | Undergraduate

Apr 2018 - Mar 2021

- Major: Computer Science and Engineering
- Supervisor: Prof. Tadahiro Taniguchi
- Grade: Overall GPA: 3.79/4.00
- Skipped the fourth year of undergraduate studies and matriculated directly into graduate school.

Publications and Presentations

International Conferences and Symposiums

- **Ryosuke Yamaki**, Tadahiro Taniguchi, Daichi Mochihashi. Holographic CCG Parsing. Proceedings of the 61st Annual Meeting of the Association for Computational Linguistics. 2023. Oral. [🔗](#)
- Haruka Kumagai, **Ryosuke Yamaki**, Hiroki Naganuma. Story-to-Images Translation: Leveraging Diffusion Models and Large Language Models for Sequence Image Generation. The 2nd Workshop on User-centric Narrative Summarization of Long Videos. 2023. [🔗](#)

Preprints

- Yuji Naraki, **Ryosuke Yamaki**, Yoshikazu Ikeda, Takafumi Horie, Hiroki Naganuma. Augmenting NER Datasets with LLMs: Towards Automated and Refined Annotation. arXiv preprint arXiv:2404.01334. 2024. **Under Review.** [🔗](#)

Domestic Conferences and Symposiums

- **山木良輔**, 品川政太郎, 持橋大地, 谷口忠大. Hol-CCG 構文解析と拡散モデルの統合による構文構造を陽に考慮した画像生成. 言語処理学会第 30 回年次大会発表論文集. 2024. 1535-1540. [🔗](#)
- 松井悠太, **山木良輔**, 上田亮, 品川政太郎, 谷口忠大. Metropolis-Hastings Captioning Game による複数の視覚言語モデルのバイズ的統合. 言語処理学会第 30 回年次大会発表論文集. 2024. 1925-1930. [🔗](#)
- 檜木悠士, **山木良輔**, 池田愛和, 堀江孝文, 長沼大樹. 固有表現抽出における大規模言語モデルを用いた自動アノテーション. 言語処理学会第 30 回年次大会発表論文集. 2024. 2171-2176. [🔗](#)
- 長谷川翔一, 伊藤昌樹, **山木良輔**, 坂口太一, 萩原良信, 谷口彰, エルハフィロトフィ, 谷口忠大. 生活支援ロボットの行動計画のための大規模言語モデルと場所概念モデルの活用. 第 41 回日本ロボット学会学術講演会(RSJ2023). 2023.
- **山木良輔**. Holographic CCG —構文構造と実世界情報の統合—. 日本認知言語学会第 24 回全国大会. 2023.

- 熊谷はるか, **山木良輔**, 長沼大樹. 物語のコンテキスト情報を用いた拡散モデル. 第 26 回画像の認識・理解シンポジウム(MIRU2023). 2023.
- **山木良輔**, 谷口忠大, 持橋大地. 構文解析と画像生成の統合による機能語の言語理解. 言語処理学会. 第 29 回年次大会発表論文集. 2023. 3008-3012. [🔗](#)
- **山木良輔**, 檜木悠士, 長沼大樹. 大規模言語モデルによる脚本データの解析: プロダクト・プレイスメント挿入箇所の探索と評価. 言語処理学会第 29 回年次大会発表論文集. 2023. 2748-2752. [🔗](#)
- 長谷川翔一, **山木良輔**, 谷口彰, 萩原良信, エルハフィロトフィ, 谷口忠大. 大規模言語モデルと場所概念モデルの統合による未観測物体の語彙を含んだ言語指示理解. 第 37 回人工知能学会全国大会論文集. 2023. [🔗](#)
- **山木良輔**, 谷口忠大, 持橋大地. Holographic Embeddings による CCG 構文解析. 言語処理学会第 28 回年次大会発表論文集. 2022. 1221-1226. [🔗](#)

Article

- **山木良輔**. Holographic CCG Parsing. 自然言語処理. 30.4 (2023): 1251-1255. [🔗](#)

Invited Talk

- **山木良輔**. 言葉を操る人工知能と言葉のあいまい性. 立命館中学校ライスボールセミナー. 2023. [🔗](#)
- **山木良輔**. Holographic CCG Parsing. NLP コロキウム. 2023. [🔗](#)

Academic Awards

優秀賞 [🔗](#)

Mar 2023

- 構文解析と画像生成の統合による機能語の言語理解
- 言語処理学会第 29 回年次大会(NLP2023)

博報堂 DY ホールディングス賞 [🔗](#)

Mar 2023

- 大規模言語モデルによる脚本データの解析: プロダクト・プレイスメント挿入箇所の探索と評価
- 言語処理学会第 29 回年次大会(NLP2023)

若手奨励賞 [🔗](#)

Mar 2022

- Holographic Embeddings による CCG 構文解析
- 言語処理学会第 28 回年次大会(NLP2022)

Scholarship and Fellowship

Ritsumeikan Advanced Research Academy Student Fellow [🔗](#)

Apr 2023 - present

- JST SPRING program to support doctoral students. [🔗](#)
- Grant Number: JPMJSP2101

Ritsumeikan University Saionji Memorial Scholarship [🔗](#)

Dec 2018 - Dec 2020

- Merit-based scholarship to encourage students who are recognized as having achieved excellent grades in their academic courses leading to a bachelor's degree and who exemplify learning and growth at the University.

Skills

Programming

Python, C, Julia, MATLAB

Framework and Tools

PyTorch, Git, Docker, WandB, SQL

Languages

Japanese (Native), English (Professional working proficiency)

Licenses and Certifications

Network Specialist Examination Issued by Ministry of Economy, Trade and Industry	Jun 2021
Database Specialist Examination Issued by Ministry of Economy, Trade and Industry	Dec 2020
Applied Information Technology Engineer Examination Issued by Ministry of Economy, Trade and Industry	Dec 2019
Fundamental Information Technology Engineer Examination Issued by Ministry of Economy, Trade and Industry	May 2019
TOEIC Listening & Reading Test: 950/990 Issued by ETS	Dec 2019
Driver's License Issued by Public Safety Commission	Jul 2018
2nd class Qualified Certified Electrician Issued by Ministry of Economy, Trade and Industry	Jan 2021
2nd grade Certified Skilled Worker of Financial Planning Issued by Japan Association for Financial Planners	Oct 2022
3rd grade Certified Skilled Worker of Financial Planning Issued by Japan Association for Financial Planners	Jun 2022
Aromatherapy Test Level 1 Issued by Aroma Environment Association of Japan	Dec 2022