

Yui Tatsumi

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<https://qwert-top.github.io> | <https://github.com/qwert-top> | <https://www.linkedin.com/in/qwert-top>

EDUCATION

Waseda University

Tokyo, Japan

MEng in Computer Science and Communications Engineering

Apr 2025 – Expected Mar 2027

Relevant Coursework: Natural Language Processing, Software Development

BEng in Communications and Computer Engineering, GPA: 3.6/4.0 (top 5%)

Apr 2021 – Mar 2025

Relevant Coursework: Computer Programming, Multimedia Systems, Artificial Intelligence, Software Engineering, Computer Architecture, Algorithms and Data Structures, Operating System, Signal Processing, Probability and Statistics, Linear Algebra, Calculus, Discrete Mathematics and more.

International Christian University High School

Tokyo, Japan

General Education, GPA: 4.8/5.0

Sep 2018 – Mar 2021

EXPERIENCE

Waseda University

Tokyo, Japan

Graduate Research Student at Advanced Multimedia Systems Lab

Apr 2025 – Expected Mar 2027

- Leading a research project on Learned Image Compression for Humans/Machines.

Undergraduate Research Student at Advanced Multimedia Systems Lab

Sep 2023 – Mar 2025

- Created a neural network based Japanese Sign Language classification model which classify sentence types by focusing on the facial expressions. Achieved a classification accuracy of 96.05%.
- Created a neural network based scalable image compression model which compress images for both human vision and machine vision simultaneously, by utilizing the residual information. Outperformed the previous method by 4.23% in BD-rate.
- Published two first-authored papers at *IEEE GCCE 2024* and *PCSJ/IMPS 2024*.

Research Student at Natural Language Processing Lab

Apr 2023 – Aug 2023

- Participated in Kaggle's "Google - American Sign Language Fingerspelling Recognition" competition, working on machine learning, data analysis, and visualization to recognize ASL fingerspelling.

National Institute of Information and Communications Technology (NICT)

Tokyo, Japan

Commissioned Research Assistant

Apr 2025 – Expected Mar 2026

- Working on research projects such as Scalable Image Coding for Humans and Machines and Video Frame Interpolation.

Commissioned Research Support Staff

Apr 2024 – Mar 2025

- Worked on three research projects: Image Coding for Machines, Scalable Image Coding for Humans and Machines and Video Frame Interpolation.
- Published eight papers at conferences such as *IEEE MMSP 2024* and *IEEE ICCE 2025* as a commissioned research team from Waseda University.

Overseas Experience

Hawaii, U.S.

- Lived in Oahu Island, Hawaii, and went to public middle and high school.

Oct 2015 – Jun 2018

PUBLICATIONS

Journal Papers

- Image Coding for Object Recognition on Contour Feature Learning with Flexible Object Selection
Takahiro Shindo, Taiju Watanabe, **Yui Tatsumi**, Hiroshi Watanabe
IEEE Access, Vol.13

Conference Papers

- Seed Selection for Human-Oriented Image Reconstruction via Guided Diffusion
Yui Tatsumi, Ziyue Zeng, Hiroshi Watanabe
IEEE GCCE 2025
- Bidirectional Attention-Gated Motion Injection for Frame Interpolation
Ziyue Zeng, **Yui Tatsumi**, Hiroshi Watanabe
IEEE GCCE 2025
- Assessing the Effectiveness of Residual Information in Scalable Image Coding for Humans and Machines
Yui Tatsumi, Ziyue Zeng, Hiroshi Watanabe
MIRU2025 (in Japanese)

- Evaluation of Face Recognition Accuracy in Decoded Images for Machine Vision
Takahiro Shindo, Taiju Watanabe, **Yui Tatsumi**, Hiroshi Watanabe
IPSJ 2025 (in Japanese)
- Video Frame Interpolation Using Pretrained Diffusion Model
Taiju Watanabe, Takahiro Shindo, **Yui Tatsumi**, Hiroshi Watanabe
IPSJ 2025 (in Japanese)
- Delta-ICM: Entropy Modeling with Delta Function for Learned Image Compression
Takahiro Shindo, Taiju Watanabe, **Yui Tatsumi**, Hiroshi Watanabe
IEEE ICCE 2025
- Scalable Image Coding for Humans and Machines Using Feature Differences
Yui Tatsumi, Takahiro Shindo, Taiju Watanabe, Hiroshi Watanabe
PCSJ/IMPS 2024 (in Japanese)
- Assessing the Effectiveness of ICM Method for Privacy Protection
Takahiro Shindo, Taiju Watanabe, **Yui Tatsumi**, Hiroshi Watanabe
PCSJ/IMPS 2024 (in Japanese)
- Classification in Japanese Sign Language Based on Dynamic Facial Expressions
Yui Tatsumi, Shoko Tanaka, Shunsuke Akamatsu, Takahiro Shindo, Hiroshi Watanabe
IEEE GCCE 2024
- Integrating QR Code Characteristics Into Super-Resolution Method
Shoko Tanaka, **Yui Tatsumi**, Takahiro Shindo, Hiroshi Watanabe
IEEE GCCE 2024
- Refining Coded Image in Human Vision Layer Using CNN-Based Post-Processing
Takahiro Shindo, **Yui Tatsumi**, Taiju Watanabe, Hiroshi Watanabe
IEEE GCCE 2024
- Scalable Image Coding for Humans and Machines Using Feature Fusion Network
Takahiro Shindo, Taiju Watanabe, **Yui Tatsumi**, Hiroshi Watanabe
IEEE MMSP 2024
- Evaluation of Face Recognition Accuracy in Decoded Images for Machine Vision
Taiju Watanabe, Takahiro Shindo, **Yui Tatsumi**, Hiroshi Watanabe
ITE Annual Convention 2024 (in Japanese)

AWARDS

Waseda University Department Award: Honored for research activities, top 5 out of 90 students.	Mar 2025
IEEE GCCE 2024 Presentation Award: Selected based on the quality of the presentations and Q&As.	Nov 2024

SKILLS

Programming Languages: Python (with Numpy/Pandas), C, Java, some JavaScript, HTML, CSS.
 Frameworks and Application Tools: Pytorch, OpenCV; Microsoft Office.
 Languages: Japanese (Native), English, Japanese Sign Language

QUALIFICATIONS

The EIKEN Test in Practical English Proficiency Grade 1	Jul 2025
TOEIC 955	Dec 2024
TOEFL iBT 93	Oct 2019

OTHER ACTIVITIES

Japanese Sign Language Club	Apr 2021 – Mar 2025
<ul style="list-style-type: none"> • Studied Japanese Sign Language and Deaf culture at Sign language club at Waseda University. • As the president of the club, led a team of about 120 members. • Supported students at Chuo School for the Deaf with their studies using sign language. 	
Educational Tutor	Apr 2021 – Mar 2025
<ul style="list-style-type: none"> • Part-time work providing supplementary teaching to elementary, junior high, and high school students mainly on Math, Science and English at Yoyogi Kobetsu Shido Gakuin, Saitama, Japan 	
Mobile Sales Associate	Apr 2021 - May 2022
<ul style="list-style-type: none"> • Acquired knowledge of mobile carriers and devices, assessed customer needs, and proposed and completed service contracts tailored to each client at Nojima Corporation, Saitama, Japan. 	