

# Takaaki Saeki

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## EDUCATION

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### The University of Tokyo

*Ph.D. Degree in Graduate School of Information Science and Technology*

Tokyo, Japan

*Apr. 2021 – Present*

- Supervisor: Prof. Hiroshi Saruwatari and Prof. Shinnosuke Takamichi

### The University of Tokyo

*Master's Degree in Graduate School of Information Science and Technology*

Tokyo, Japan

*Apr. 2019 – Mar. 2021*

- Thesis Title: "Real-Time, Full-Band, High-Quality Neural Voice Conversion with Sub-Band Modeling and Data-Driven Phase Estimation"
- Supervisor: Prof. Hiroshi Saruwatari and Prof. Shinnosuke Takamichi

### The University of Tokyo

*Bachelor's Degree in Aerospace Engineering*

Tokyo, Japan

*Apr. 2015 – Mar. 2019*

- Supervisor: Prof. Kimiya Komurasaki

## EXPERIENCE

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### The University of Tokyo

*Research Assistant*

Tokyo, Japan

*May 2020 – Present*

- Researching on text-to-speech synthesis and voice conversion.
- "Stress-free, real-time, and full-band voice conversion based on perceptual models," executed under the Commissioned Research of MIC SCOPE 182103104.
- Project page: <https://sites.google.com/site/shinnosuketakamichi/research-topics/scope2019>
- Representative: Shinnosuke Takamichi

### LINE Corp.

*Part-Time Researcher*

Tokyo, Japan

*Mar. 2021 – Present*

- Designing research proposals and implementing new text-to-speech synthesis methods.
- Mentor: Kentaro Tahchibana and Ryuichi Yamamoto

### NEC Data Science Research Laboratories

*Research Intern*

Kanagawa, Japan

*Aug. 2019 – Sep. 2019*

- Worked on speech enhancement.
- Mentor: Osamu Hoshuyama

### The University of Tokyo

*Research Assistant*

Tokyo, Japan

*Apr. 2019 – July 2019*

- Lectured how to develop audio-based interaction system in "Project Practice" course.

### Recruit Co., Ltd.

*Part-Time Engineer*

Tokyo, Japan

*Apr. 2019 – June 2019*

- Worked on data analysis and developed recommendation engine.
- Lectured a training course of data analysis for newcomers.
- Mentor: Naoya Osugi

### Recruit Co., Ltd.

*Data Engineering Intern*

Tokyo, Japan

*Feb. 2019 – Mar. 2019*

- Worked on data analysis and developed recommendation engine.
- Achieved award for excellence (2nd place) in Natural Language Processing Hackathon.
- Mentor: Naoya Osugi

### Delight Inc.

*Part-Time Engineer*

Tokyo, Japan

*May 2017 – Apr. 2019*

- Developed simulation software of fluid dynamics.
- Read research papers and implemented algorithms of thermo-fluid dynamics.

## TECHNICAL SKILLS

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**Languages:** Python, C/C++, Shell Script, LaTeX, SQL (BigQuery), HTML/CSS  
**Developer Tools:** Git, Docker, Amazon Web Service, Google Cloud Platform, VS Code  
**Libraries:** NumPy, pandas, PyTorch, Tensorflow, Chainer

## LANGUAGE SKILLS

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Japanese (native) and English (conversant)

## AWARDS

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| <b>IEICE ISS Student Poster Award</b>   <i>IEICE Speech Committee 2021</i>                      | <i>Mar. 2021</i> |
| <b>Award for Excellence</b>   <i>Natural Language Processing Hackathon in Recruit Co., Ltd.</i> | <i>Feb. 2019</i> |

## PUBLICATIONS (JOURNAL PAPER)

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**Takaaki Saeki**, Shinnosuke Takamichi, and Hiroshi Saruwatari,  
“Incremental Text-to-Speech Synthesis Using Pseudo Lookahead with Large Pretrained Language Model,”  
*IEEE Signal Processing Letters*. (ACCEPTED)

**Takaaki Saeki**, Yuki Saito, Shinnosuke Takamichi, and Hiroshi Saruwatari,  
“Real-Time Full-Band Voice Conversion with Sub-Band Modeling and Data-Driven Phase Estimation of Spectral Differentials,”  
*IEICE Transactions on Information and Systems*. (ACCEPTED)

## PUBLICATIONS (PEER-REVIEWED CONFERENCE PAPER)

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**Takaaki Saeki**, Yuki Saito, Shinnosuke Takamichi, and Hiroshi Saruwatari,  
“Real-Time, Full-Band, Online DNN-Based Voice Conversion System Using a Single CPU,”  
in *Proceedings of Conference of the International Speech Communication Association (INTERSPEECH)*, pp.  
1021–1022, Shanghai, China, Oct. 2020.

Naoki Kimura, Zixiong Su, and **Takaaki Saeki**,  
“End-to-End Deep Learning Speech Recognition Model for Silent Speech Challenge,”  
in *Proceedings of Conference of the International Speech Communication Association (INTERSPEECH)*, pp.  
1025–1026, Shanghai, China, Oct. 2020..

**Takaaki Saeki**, Yuki Saito, Shinnosuke Takamichi, and Hiroshi Saruwatari,  
“Lifter Training and Sub-Band Modeling for Computationally Efficient and High-Quality Voice Conversion Using Spectral Differentials,”  
in *Proceedings of IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp.  
7784–7788, Barcelona, Spain, May 2020.

## EVENTS

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|------------------------------------------------------------------------------------------------|------------------|
| <b>Sainokuni Buisiness Arena 2021</b>                                                          | ONLINE           |
| “Research on Stress-Free, Real-Time, and Full-Band Voice Conversion Based on Perceptual Model” | <i>Jan. 2021</i> |
| <b>CEATEC 2020</b>                                                                             | ONLINE           |
| “Research on Stress-Free, Real-Time, and Full-Band Voice Conversion Based on Perceptual Model” | <i>Oct. 2020</i> |

## PATENTS

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Shinnosuke Takamichi, Yuki Saito, **Takaaki Saeki**, and Hiroshi Saruwatari,  
“Voice Conversion System, Method, and Program,”  
International Patent Application No. PCT/JP2021/4367. (Submitted)

Shinnosuke Takamichi, Yuki Saito, **Takaaki Saeki**, and Hiroshi Saruwatari,  
“Voice Conversion System, Method, and Program,”  
International Patent Application No. PCT/JP2020/031122. (Submitted)

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