LESTER PHILLIP VIOLETA

Email: lpgvioleta@gmail.com

Personal Website — Google Scholar — GitHub

OVERVIEW OF RESEARCH INTERESTS AND EXPERIENCE

I am interested in a variety of generative AI tasks, where my experience is mostly on speech audio, primarily focusing on electrolaryngeal speech and singing voice data. My work has been published in top speech conferences and journals and I have co-organized academic challenges and served in review committees. Aside from research, I also have experience in the engineering and deployment aspects of AI through my experiences working with startups as a founding AI engineer.

EDUCATION

Ph.D. in Informatics (Computer Science) Apr. 2023 - Present
Nagoya University Nagoya, Japan

- Adviser: Prof. Tomoki Toda
- Research Title: Development of Speaking Aids for Atypical Speakers Through Voice Conversion
- 1 of 4 students selected for this full scholarship program
- Recent updates on main project: Electrolaryngeal Speech Enhancer (in Japanese, demo starts at 1:02)
- Recent updates on side project: Singing Voice Converter (in Japanese, demo starts at 1:00)

M.S. in Informatics (Computer Science) Apr. 2021 - Mar. 2023
Nagoya University Nagoya, Japan

- Adviser: Prof. Tomoki Toda
- Research Title: Pretraining and Adaptation Techniques for Pathological Speech Recognition
- 1 of 4 students selected for this full scholarship program

B.S. Electronics Engineering Aug. 2015 - May 2020
Ateneo de Manila University Quezon City, Philippines

- Advisers: Prof. Jose Claro Monje and Prof. Erees Queen Macabebe
- Research Title: Microgrid Energy Management System Development for Remote-Island Electricity Access
- Honor's program (Top 15% of students)

Research Exchange Student Aug. 2019 - Jan. 2020
Institut Catholique d'Arts et Metiers, Site de Paris-Senart Lieusaint, France

- Adviser: Prof. Meriem Labourel
- Research Title: Microgrid Energy Management System Development for Remote-Island Electricity Access
- 1 of 3 students selected for this study abroad program

JOURNAL PUBLICATIONS

1. **L.P. Violeta**, D. Ma, W.-C. Huang, T. Toda, "Pretraining and Adaptation Techniques for Electrolaryngeal Speech Recognition", IEEE/ACM. TASLP, May. 2024. Link.

CONFERENCE PUBLICATIONS

1. **L.P. Violeta**, W.-C. Huang, D. Ma, R. Yamamoto, K. Kobayashi, T. Toda, "Electrolaryngeal Speech Intelligibility Enhancement Through Robust Linguistic Encoders", Proc. ICASSP, Seoul, South Korea, Apr. 2024. Link.
2. **L.P. Violeta**, T. Toda, "An Analysis of Personalized Speech Recognition System Development for the Deaf and Hard-of-Hearing", Proc. APSIPA, Taipei, Taiwan, Oct. 2023. Link.
3. **L.P. Violeta**, D. Ma, W.-C. Huang, T. Toda, "Intermediate Fine-tuning Using Imperfect Synthetic Speech for Improving Electrolaryngeal Speech Recognition", Proc. ICASSP, Rhodes Island, Greece, Jun. 2023. Link.
4. **L.P. Violeta**, W.-C. Huang, T. Toda, "Investigating Self-supervised Pretraining Frameworks for Pathological Speech Recognition", Proc. INTERSPEECH, Incheon, Korea, Sep. 2022. Link.
5. B. Halpern, T. Tienkamp, W.-C. Huang, **L.P. Violeta**, T. Rebernik, S. de Visscher, M. Witjes, M. Wieling, D. Abur, T. Toda, "Improving severity preservation of healthy-to-pathological voice conversion with global style tokens", Proc. Interspeech, Kos Island, Greece, Sep. 2024. Link.
6. W.-C. Huang, **L.P. Violeta**, S. Liu, J. Shi, T. Toda, "The Singing Voice Conversion Challenge 2023", Proc. IEEE ASRU, Taipei, Taiwan, Dec. 2023. Link.
7. R. Yamamoto, R. Yoneyama, **L.P. Violeta**, W.-C. Huang, T. Toda, "A comparative study of voice conversion models with large-scale speech and singing data: the T13 systems for the Singing Voice Conversion Challenge 2023", Proc. IEEE ASRU, Taipei, Taiwan, Dec. 2023. Link.
8. B. Halpern, W.-C. Huang, **L.P. Violeta**, R. van Son, T. Toda, "Improving severity preservation of healthy-to-pathological voice conversion with global style tokens", Proc. IEEE ASRU, Taipei, Taiwan, Dec. 2023. Link.
9. D. Ma, **L.P. Violeta**, K. Kobayashi, T. Toda, "Two-Stage Training Method for Japanese Electrolaryngeal Speech Enhancement Based on Sequence-to-Sequence Voice Conversion", Proc. SLT, Doha, Qatar, Jan. 2023. Link.
10. W.-C. Huang, B.M Halpern, **L.P. Violeta**, O. Scharenborg, T. Toda, "Towards Identity Preserving Normal to Dysarthric Voice Conversion", Proc. ICASSP, Singapore, May 2022. Link.

WORK EXPERIENCE

Founding AI Engineer — Feb. 2024 - Present
Voice-Swap.AI — *London, UK (Remote)*

- Developed singing and speech synthesis models for SaaS platform and clients

Research Assistant — Oct. 2024 - Present
Nagoya University — *Aichi, Japan*

- Advisers: Dr. Yusuke Yasuda and Prof. Junichi Yamagishi

Research Assistant — Oct. 2023 - Mar. 2024
Sony Computer Science Laboratories — *Tokyo, Japan*

- Adviser: Dr. Taketo Akama
- Research on highly-controllable and low-resourced singing voice synthesis

Research Assistant Apr. 2022 - Mar. 2023
Nagoya University *Aichi, Japan*

- Adviser: Prof. Tomoki Toda
- Developed speech recognition systems for disordered speech datasets
- Provided analyses and insights of the disordered speech data

Research Science Intern Mar 2022
NTT Media Intelligence Laboratories *Kanagawa, Japan*

- Adviser: Dr. Atsushi Ando
- Developed and analyzed speech diarization system using various encoders

Research Science Intern Jan 2022 - Feb 2022
Hitachi Ltd. *Tokyo, Japan*

- Adviser: Dr. Takashi Sumiyoshi
- Developed speech recognition systems for low-resourced datasets

Machine Learning Engineer Jan 2021 - Jun 2021
Wasimil *Remote*

- Provided data insights to marketing campaigns using natural language processing and machine learning
- Developed a k-means clustering algorithm to group customers for personalized marketing campaigns
- Developed models to review customer behavior towards marketing campaigns

Software Engineer May 2020 - Dec 2020
Senti AI *Makati, Philippines*

- Developed chatbots for keeping track of employee health status using Google Dialogflow
- Created modules using natural language processing to improve message intent extraction
- Created a context-free grammar module to properly manage the chatbot's conversation state diagram flow

ACADEMIC ACTIVITIES

Organizing Committee Dec. 2022 - Dec. 2023
The Singing Voice Conversion Challenge 2023 ASRU 2023 Special Session

- Developed open-sourced baseline system and starter kits
- Constructed the official SVCC dataset from the NHSS dataset

Peer Review Committee Aug. 2024 - Present
Various international conferences

- IEEE SLT (2024)
- IEEE ICASSP (2025)
- ISCA INTERSPEECH (Planned for 2025)

AWARDS AND SCHOLARSHIPS

Scholarship	Monbukagakusho Japanese Government Scholarship (Ph.D. Degree)
Scholarship	Monbukagakusho Japanese Government Scholarship (Master's Degree)
Travel Grant	Interspeech 2022 Travel Grant
Fellowship	Nagoya University Interdisciplinary Frontier Fellowship

NON-PEER REVIEWED WORKS

1. **L.P. Violeta**, T. Akama, "A Preliminary Investigation on Flexible Singing Voice Synthesis Through Decomposed Framework with Inferrable Features", Internship Technical Report, Link
2. **L.P. Violeta**, W.-C. Huang, D. Ma, R. Yamamoto, K. Kobayashi, T. Toda, "Electrolaryngeal speech enhancement through strong linguistic encoding methods", Vol. 123, No. 212, SP2023-33, pp. 33-38, Oct. 2023.
3. **L.P. Violeta**, W.-C. Huang, T. Toda, "A Comparison of Pretraining Frameworks for Improving Pathological Speech Recognition", ASJ 2-Q-25, pp. 1227-1228, Sep. 2022. Acoustical Society of Japan.
4. K. Kobayashi, K. Ogita, K. Niwa, **L.P. Violeta**, W.-C. Huang, T. Toda, "Electrolaryngeal Speech Corpus (in Japanese)", 2-Q-28, pp. 1221-1222, May. 2024. Acoustical Society of Japan.
5. D. Ma, L.P. Violeta, K. Kobayashi, T. Toda, "Sequence-to-sequence voice conversion for electrolaryngeal speech enhancement with multi-stage pretraining and fine-tuning techniques," Vol. 123, No. 212, SP2023-32, pp. 27-32, Oct. 2023.
6. D. Ma, **L.P. Violeta**, K. Kobayashi, T. Toda, "Sequence-to-sequence Voice Conversion Training Using Synthetic Parallel Data for Electrolaryngeal Speech Enhancement", ASJ 2-8-8, pp. 1161-1162, Sep. 2022. Acoustical Society of Japan.

LANGUAGES

Native	Tagalog
Bilingual	English (TOEFL: 105/120)
Conversational	Japanese