

# Jeongmin Liu

M.S. Candidate

M.S. Candidate, Smart Sound Systems Laboratory,  
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## Skills

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### Signal Processing

- Speech Signal Processing
- Acoustic Array Signal Processing

### Deep Learning

- Speech Enhancement
- Music Information Retrieval

### Programming Languages

- Intermediate: Python, MATLAB
- Basic: C/C++, Unity (C# script)
- Experienced: Java, .Net Framework

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## Education

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### M.S. Candidate / Electrical Engineering

Mar 2018 - Feb 2020

- Korea Advanced Institute of Science and Technology (KAIST)
- GPA (The 1st - 3rd Semester): 3.65 / 4.3

### B.S. / Electrical Engineering

Mar 2013 - Feb 2018

- Pohang University of Science and Technology (POSTECH)
- GPA: 3.60 / 4.3

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## Papers

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### Conference Papers

Jeongmin Liu, Byeongho Jo, Jung-Woo Choi, **Dereverberation Based on Deep Neural Networks with Directional Feature from Spherical Microphone Array Recordings**, in Proc. of the 23rd International Congress on Acoustics (ICA 2019), Aachen, Germany, September 9-13, 2019. (*accepted*)

- In the paper, the authors propose a method that uses spatially-averaged acoustic intensity vector as an input feature of the DNN in order to make the DNN perform speech dereverberation by considering spatial information.
- **Papers** [sytronik.github.io/assets/ICA2019.pdf](https://sytronik.github.io/assets/ICA2019.pdf)  
**GitHub** [github.com/Sytronik/dereverberation-directional-feature](https://github.com/Sytronik/dereverberation-directional-feature)

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## Projects

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### End-to-end Multi-channel Speech Dereverberation (*In Progress*)

July 2019 - now

- To research end-to-end speech dereverberation, I firstly implemented speech denoising wavenet with PyTorch. I am researching better end-to-end speech dereverberation algorithm.
- **GitHub** [github.com/Sytronik/denoising-wavenet-pytorch](https://github.com/Sytronik/denoising-wavenet-pytorch)

### Music Boundary Detection using Fully Convolutional Neural Networks

May - July 2019

- For the team projects in the lecture “Musical Applications of Machine Learning (GCT634)” of KAIST, My team made the DNN model that detects boundaries between musical sections, which have different musical themes. I contributed to the DNN model structure and training techniques, and I implemented them.
- **Report** [sytronik.github.io/assets/music-boundary-detection-report.pdf](https://sytronik.github.io/assets/music-boundary-detection-report.pdf)  
**GitHub** [github.com/Sytronik/music-boundary-detection](https://github.com/Sytronik/music-boundary-detection)

### VR Drum

2017

- For the graduation project, my team created an application that lets people can play the drums in virtual reality. I was the main programmer in the project.
- **Report** [sytronik.github.io/assets/VR-drum-report-korean.pdf](https://sytronik.github.io/assets/VR-drum-report-korean.pdf)  
**Demo Video** [youtu.be/QXyJwmrgmhQ](https://youtu.be/QXyJwmrgmhQ)

### Extracting Musical Rhythms from Repetitive Videos

Mar - May 2017

- For the project in the lecture “Digital Image Processing (EECE551)” of POSTECH, I created a simple algorithm as the first step to choose music that rhythmically matched to the repetitive videos. The algorithm extracts a rough temporal regularity from repetitive videos, approximates the regularity to a typical 4/4 rhythm, and inserts a simple rhythm instrument pattern.
- **Report** [sytronik.github.io/assets/extracting-musical-report.pdf](https://sytronik.github.io/assets/extracting-musical-report.pdf)  
**Results (.zip)** [sytronik.github.io/assets/extracting-musical-results.zip](https://sytronik.github.io/assets/extracting-musical-results.zip)

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## Languages

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**Korean** / native

**English** / OPIc Intermediate High (IH)

July 2019

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## Teaching Assistant

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### Lectures in School of Electrical Engineering, KAIST

- **Signals and Systems / EE202**  
2019 Spring  
The basic lecture of signal processing area
- **Electronics Design Lab <Robocam> / EE405**  
2018 Fall  
The practice of embedded system programming