TAEGYUN KWON

Graduate School of Culture Technology (Ph.D. Student, M.S) and Physics (B.S.)

Daehak-ro 291, Yuseong-gu, Daejeon, Republic of Korea, 34141

+82-10-9941-1257 | *ilcobo2@gmail.com*

INTERESTS

- · Music Information Retrieval
- · Automatic Music Transcription & Alignment
- · Expressive Music Performance Modeling
- · Deep Learning
- · Audio Signal Processing

EDUCATION

Korea Advanced Institute of Science and Technology (KAIST)

· Ph.D. student, Graduate School of Culture Technology   Sep. 2018 - Present

     Music and Audio Computing Lab. (Supervisor: Prof. Juhan Nam)

· M.S., Graduate School of Culture Technology   Sep. 2016 - Aug. 2018

     Music and Audio Computing Lab. (Supervisor: Prof. Juhan Nam)

· B.S., Department of Physics   Feb. 2011 - Aug. 2016

     Include exchange student at:

     - Université de Technologie de Compiégne (UTC)   Sep. 2014 - Feb. 2015

     - Technische Universität München (TUM)   Aug. 2014

WORK EXPERIENCE

Clova, Naver Corp., Korea   Jul. 2017 - Aug. 2017
Research Internship

· Developed AI-DJ project for Naver music service.

T-brain, SK Telecom, Korea   Sep. 2019 - Jan. 2020
Research Internship

· Music AI application development. Multi-instrument transcription / Separation.

PROJECTS

Expressive music performance creation system using machine learning
Model human-like expressive performance on piano with machine learning approaches.   Jul. 2018 - Present

Developing transcription algorithm for guitar performance audio
Developed a neural transcription system for guitar with a small number of labeled audio.   Sep. 2017 - Dec. 2017

Developing music score-based web platform for classical music appreciation
Developed music visualization web platform with automatic audio-to-score alignment.   Feb. 2016 - Sep. 2016

PUBLICATIONS

1. **Taegyun Kwon**, Dasaem Jeong, and Juhan Nam. "Polyphonic Piano Transcription Using Autoregressive Multi-State Note Model"
   Proceedings of the 21th International Society for Music Information Retrieval Conference (ISMIR), 2020 (Accepted)

2. Dasaem Jeong, **Taegyun Kwon**, and Juhan Nam. "Note Intensity Estimation of Piano Recordings Using Coarsely-aligned MIDI Score"
   Journal of the Audio Engineering Society, 68 (1/2), 34-47, 2019.

3. Dasaem Jeong, **Taegyun Kwon**, Yoojin Kim, Kyogu Lee, and Juhan Nam. "Hierarchical RNN-based System for Modeling Expressive Piano Performance"
   Proceedings of the 20th International Society for Music Information Retrieval Conference (ISMIR), 2019

4. Saebyul Park, **Taegyun Kwon**, Jongpil Lee, Jeounghoon Kim, and Juhan Nam. "A Cross-Scape Plot Representation for Visualizing Symbolic Melodic Similarity"
   Proceedings of the 20th International Society for Music Information Retrieval Conference (ISMIR), 2019

5. Dasaem Jeong, **Taegyun Kwon**, Yoojin Kim, and Juhan Nam. "Graph Neural Network for Music Score Data and Modeling Expressive Piano Performance"
   Proceedings of the 36th International Conference on Machine Learning (ICML), 2019

6. Dasaem Jeong, **Taegyun Kwon**, Yoojin Kim, and Juhan Nam. "Score and Performance Features for Rendering Expressive Music Performances"
   Proceedings of the Music Encoding Conference (MEC), 2019

7. Dasaem Jeong, **Taegyun Kwon**, and Juhan Nam. "VirtuosoNet: A Hierarchical Attention RNN for Generating Expressive Piano Performance from Music Score"
   Workshop on Machine Learning for Creativity and Design, Neural Information Processing Systems (NeurIPS), 2018

8. Dasaem Jeong, **Taegyun Kwon**, and Juhan Nam. "A Timbre-based Approach to Estimate Key Velocity from Polyphonic Piano Recordings"
   Proceedings of the 19th International Society for Music Information Retrieval Conference (ISMIR), 2018

9. Dasaem Jeong, **Taegyun Kwon**, Chaelin Park, and Juhan Nam. "PerformScore: Toward Performance Visualization With the Score on the Web Browser"
   Late Breaking Demo in the 18th International Society for Musical Information Retrieval Conference (ISMIR), 2017

10. Adrian Kim, Soram Park, Jangyeon Park, Jung-Woo Ha, **Taegyun Kwon** and Juhan Nam. "Automatic DJ Mix Generation Using Highlight Detection"
    Late Breaking Demo in the 18th International Society for Musical Information Retrieval Conference (ISMIR), 2017

11. **Taegyun Kwon**, Dasaem Jeong and Juhan Nam. "Audio-to-Score Alignment Of Piano Music Using RNN-based Automatic Music Transcription "
    Proceedings of the 14th Sound and Music Computing Conference (SMC), 2017

PATENTS

1. Juhan Nam, Daseam Jeong, **Taegyun Kwon**, Yoojin Kim. "Method and Device for Multi-Style Conditioned Expressive Piano Reperformance Rendering" - Korean Patent Application no. 10-2020-0070101, 2020

2. Juhan Nam, **Taegyun Kwon**, Dasaem Jeong. "Method and System for Audio and Score Alignment of Music Using Neural Network-Based Automatic Music Transcription" - Korean Patent Registration no. 10-1939001-0000, 2019

EXTRACURRICULAR ACTIVITIES

Amature Classical Pianist

· Play the classical to the late romantic repertoire: Chopin, Brahms, Debussy and etc.

Engineers Without Borders KAIST   Sep. 2016 - Feb. 2018

· Participated voluntary projects in Nepal and Mongolia.

KAIST Orchestra   Mar. 2011 - Jul. 2013

· Participated 4 biannual concerts and 1 winter festival as a violist. Participated a commencement orchestration as a pianist.

REFERENCE

Prof. Juhan Nam

· Dept. of Graduate School of Culture Technology, KAIST
· 291 Daehak-Ro, Yuseong-Gu, Daejeon 34141, Korea
· E-mail: juhannam@kaist.ac.kr
· Tel: +82-42-350-2926