Yun-Ning Hung (洪韻甯)

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I am currently a research assistant working on applying machine learning(ML) to music information retrieval. "ML can change the future music industry" is a belief I always kept in mind. I have four-years experience in app and web development. I am also an amateur multi-instrument player.

Education

B. S. in Electrical Engineering, National Cheng Kung University   *2012 Sep. - 2016 Jun.*
- Cumulative GPA: 3.764/4.0

UW Madison Exchange Program, University of Wisconsin Madison   *2015 Sep. - 2015 Dec.*
- Cumulative GPA: 3.67/4.0

Working Experience

Research Assistant at Academia Sinica.   *2017 Sep. - present*
- Apply machine learning algorithm to Music Information Retrieval
- Published four papers with one accepted by ISMIR 2018 [3]
- Participated in collaboration program with KKBOX Inc.

App and Web Developer at Adv.Media.   *2016 Apr. - 2017 Jun.*
- Developed AR/VR applications by Unity.
- Back-end system design and dataset management
- Developed web platforms for internal management system

Front-End Developer at Jimbo's Coffeeine, a student startup company   *2014 Aug. - 2015 Aug.*
- Creating algorithm and web platform to analyze exam data

Tutor and Mentor   *2014 Jan. - 2016 Aug.*
- Personal tutor teaching junior/senior high school math and science
- Tzu Chi Senior High School guitar club mentor

Activities PR Personnel at social welfare organization   *2014 Jul. - 2014 Aug.*
- Managed website and organized activities

Publication

[1] **Yun-Ning Hung**, Yi-An Chen and Yi-Hsuan Yang, "Learning Disentangled Representations for Timber and Pitch in Music Audio", arXiv preprint arXiv:1811.03271

[2] **Yun-Ning Hung**, Yi-An Chen and Yi-Hsuan Yang, "Multitask learning for frame-level instrument recognition", arXiv preprint arXiv:1710.10814

[3] **Yun-Ning Hung** and Yi-Hsuan Yang, "Frame-level Instrument Recognition by Timbre and Pitch", in Proceeding of the 19th International Society for Music Information Retrieval Conference **(ISMIR)**, Sep. 2018

[4] Lang-Chi Yu, Yi-Hsuan Yang, **Yun-Ning Hung**, Yi-An Chen, "Hit Song Prediction for Pop Music by Siamese CNN with Ranking Loss" in arXiv preprint arXiv:1710.10814, Oct. 2017

Project

Music Auto-tagging
Advised by Dr. Yi-Hsuan Yang (director of Music and AI Lab at Academia Sinica), and cooperated with KKBOX Inc. machine learning team.
- Instrument recognition [3] – developed a deep learning model to handle music harmonic

structure and achieve frame-level instrument recognition
- Music genre tagging – developed a deep learning model to achieve subgenre tagging on KKBOX's music data
- Music emotion tagging – developed deep learning algorithm for cross-domain (audio and symbolic) emotion tagging; applied the tags to conditional drum and chord generation

Multi-pitch Streaming [2]
Advised by Dr. Yi-Hsuan Yang, Academia Sinica
- Developed a multitask model to achieve multi-pitch streaming
- Derived a large-scale synthesized dataset, Musescore dataset, of 340,000 MIDI files

Music Disentanglement [1]
Advised by Dr. Yi-Hsuan Yang, Academia Sinica
- Developed an auto-encoder model for pitch and timbre representation learning
- Applied the learned features to AI composing and music editing

Sound of Summer
Artwork exhibited at NCKU Art Festival, cooperated with NCKU art center
- Created a conductive silver ink painting which can deploy sound effect through touching

BadgerScale
Project done in course "Software Engineering" given by Prof. Peter Ohmann at UW Madison.
- Developed an App platform for students to sell or buy sport tickets
- I was responsible for front-end development by using Ionic

Homework Discussion Social Media
Student project done in course "Web Programming" given by Prof. Chang Tien-Hao at NCKU
- Social platforms for students to exchange their notes, homework or publications
- I was responsible for website Front-end development

Academic Award

WIMIR Travel Grant, ISMIR 2018	2018
Study Abroad Scholarship, NCKUEE	2015 Fall
Honorable Mention, NCKU Campus App Creativity Competition	2015 Spring
Academic Excellence Award (Top 10% students in the class), NCKUEE	2013 Aug. - 2014 Jun.
Academic Excellence Award, Taipei Association of Medical Technologists	2012 Sep. - 2016 Jun.

Skill

Language: Mandarin(mother tongue), English(Fluent), Spanish (Familiar)
Programming: Python, C#, PyTorch, Git, Tensorflow
Web&APP: HTML, CSS, Javascript, PHP-SQL, Laravel, Unity, Ionic
Instrument: Guitar, Piano, Flute, Harmonica

Music & Volunteer

Student ambassador and Chinese tutor, NCKU Chinese Language Center	2015 Jun. - 2016 Jun.
Worship performer, Pres House, Madison, WI	2015 Sep. - 2015 Nov.
Vice president, NCKU Guitar Club	2014 Aug. - 2015 Jan.
Resident performer, Imagine Cafe, Tainan, Taiwan	2014 Spring
Second place winner, 17th South Acoustic Song Competition	2014 Spring
Third place winner, 34th NCKU Folk Song Competition	2014 Spring
Sixth place winner, 15th South Guitar Cup songwriting competition	2014 Winter
Volunteer, NCKU Caring Club and Elder Protection Center	2013 Jan. - 2014 Jan.

(For more details, please visit my website: https://biboamy.github.io/)