

Jeng-Lin (John) Li

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Research Interest

Human Centered Computing, Behavioral Signal Processing, Affective Computing, Multimodal Representation Learning, Speech and Language, Health Analytics

Education

National Tsing Hua University, Hsinchu, Taiwan 09/2016-
Behavioral Informatics and Interaction Computation Laboratory (BIIC)
Doctoral Student in Electrical Engineering
National Tsing Hua University, Hsinchu, Taiwan 09/2012-06/2016
B.S. in Electrical Engineering

Awards/Honors

NTHU Principal Outstanding Student Scholarship (2017)
Garmin Scholarship (2018)
EMBC Student Grant Award (2019)
Interspeech Student Grant Award (2019)
Yahoo Paper Scholarship (2019)
Novatek PhD Fellowship (2020, 2021)

Talks/Teaching

NCCU: Introduction to python programming and deep learning (Aug. 2017)
III-ITES: Artificial Intelligence for Medical Diagnosis, Analytics, and Applications (Mar. 2018)
ITRI: Artificial Intelligence Applications on Human Behavior and Emotion for decision making and analytics (May 2018)
NTHU EE 6640: Speech Signal Processing, Teaching Assistant (2017)
NTHU EE 3660: Probability, Teaching Assistant (2018)

Reviewing

IEEE Transactions on Affective Computing (TAFFC), IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), Computer Speech and Language (CSL), Future Generation Computing Systems

Publications

Google Scholar Profile <https://scholar.google.com/citations?user=aBzDmTQAAAAJ&hl=en>

Journal Paper

- [1] **Jeng-Lin Li**, Tzu-Yun Huang, Chun-Min Chang, Chi-Chun Lee, "A Waveform-Feature Dual Branch Acoustic Embedding Network for Emotion Recognition" in *Frontiers in Computer Science*, section Human-Media Interaction (accepted for publication, 2020)
- [2] Bor-Sheng Ko, Yu-Fen Wang, **Jeng-Lin Li**, Chi-Cheng Li, Pei-Fang Weng, Szu-Chun Hsu, Hsin-An Hou, Huai-Hsuan Huang, Ming Yao, Chien-Ting Lin, Jia-Hau Liu, Cheng-Hong Tsai, Tai-Chung Huang, Shang-Ju Wu, Shang-Yi Huang, Wen-Chien Chou, Hwei-Fang Tien, Chi-Chun Lee, Jih-Luh Tang, "Clinically validated machine learning algorithm for detecting residual diseases with multicolor flow cytometry analysis in acute myeloid leukemia and myelodysplastic syndrome", in *EBioMedicine* (2018)

Patent

- [1] Bor-Sheng Ko, Yu-Fen Wang, Chi-Chun Lee, **Jeng-Lin Li**, Jih-Luh Tang, "Systems and methods for automated hematological abnormality detection" (2021)
- [2] Sara Monaghan, Michael Boyiadzis, Steven H. Swerdlow, Yen-Chun Liu, Bor-Sheng Ko, Yu-Fen Wang, Chi-Chun Lee, **Jeng-Lin Li**, Ming-Ya Ko, "Systems and methods for automated classification of subtyping of leukemia cells" (2021)

Conference Paper

- [1] **Jeng-Lin Li** and Chi-Chun Lee, "Using Speaker-Aligned Graph Memory Block in Multimodally Attentive Emotion Recognition Network", in *Proceedings of the International Speech Communication Association (Interspeech)*, 2020
- [2] **Jeng-Lin Li**, Ting-Yu Chang, Yu-Fen Wang, Bor-Sheng Ko, Jih-Luh Tang, Chi-Chun Lee, "A Knowledge-Reserved Distillation with Complementary Transfer for Automated FC-based Classification Across Hematological Malignancies", in *Proceedings of Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, 2020
- [3] **Jeng-Lin Li**, Chi-Chun Lee, "Attention Learning with Retrievable Acoustic Embedding of Personality for Emotion Recognition", in *Proceedings of Affective Computing and Intelligent Interaction (ACII)*, 2019
- [4] Tzu-Yun Huang, **Jeng-Lin Li**, Chun-Min Chang, Chi-Chun Lee, "A Dual-Complementary Acoustic Embedding Network Learned from Raw Waveform for Speech Emotion Recognition" in *Proceedings of Affective Computing and Intelligent Interaction (ACII)*, 2019
- [5] **Jeng-Lin Li**, Chi-Chun Lee, "Attentive to Individual: A Multimodal Emotion Recognition Network with Personalized Attention Profile", in *Proceedings of the International Speech Communication Association (Interspeech)*, 2019
- [6] Hui-Ting Hong, **Jeng-Lin Li**, Yi-Ming Weng, Chip-Jin Ng and Chi-Chun Lee, "Investigating the

- Variability of Voice Quality and Pain Levels as a Function of Multiple Clinical Parameters*" in Proceedings of the International Speech Communication Association (Interspeech), 2019
- [7] **Jeng-Lin Li**, Yu-Fen Wang, Bor-Sheng Ko, Chi-Cheng Li, Jih-Luh Tang, Chi-Chun Lee, "*Learning a Cytometric Deep Phenotype Embedding for Automatic Hematological Malignancies Classification*", in Proceedings of Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), 2019
- [8] Chih-Chuan Lu, **Jeng-Lin Li**, Yu-Fen Wang, Bor-Sheng Ko, Jih-Luh Tang and Chi-Chun Lee, "*A BLSTM with Attention Network for Predicting Acute Myeloid Leukemia Patient's Prognosis using Comprehensive Clinical Parameters*", in Proceedings of Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), 2019
- [9] Chen-Ying Hung, Ching-Heng Lin, Chi-Sen Chang, **Jeng-Lin Li**, Chi-Chun Lee, "*Predicting Gastrointestinal Bleeding Events from Multimodal In-Hospital Electronic Health Records Using Deep Fusion Networks*", in Proceedings of Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), 2019
- [10] Ming-Ya Ko, **Jeng-Lin Li**, Chi-Chun Lee, "*Learning Minimal Intra-Genre Multimodal Embedding from Trailer Content and Reactor Expressions for Box Office Prediction*", in Proceedings of the IEEE International Conference on Multimedia & Expo (ICME), 2019
- [11] Wei-Hao Chang, **Jeng-Lin Li**, Chi-Chun Lee, "*Learning Semantic-Preserving Space Using User Profile and Multimodal Media Content From Political Social Network*", in Proceedings of International Conference on Acoustics, Speech, and Signal Processing (ICASSP), 2019
- [12] Chih-Chuan Lu, **Jeng-Lin Li**, and Chi-Chun Lee, "*Learning an Arousal-Valence Speech Front-End Network using Media Data In-the-Wild for Emotion Recognition*", in Proceedings of ACM on the Audio/Visual Emotion Challenge and Workshop (AVEC), 2018
- [13] Yi-Ying Kao, Hsiang-Ping Hsu, Chien-Feng Liao, Yu Tsao, Hao-Chun Yang, **Jeng-Lin Li**, Chi-Chun Lee, Hung-Shin Lee and Hsin-Min Wang, "*Automatic Detection of Speech under Cold using Discriminative Autoencoder and Strength Modeling with Multiple Sub-dictionary Generation*", in Proceedings of International Workshop on Acoustic Signal Enhancement (IWAENC), 2018
- [14] Gao-Yi Chao, Chun-Min Chang, **Jeng-Lin Li**, Ya-Tse Wu, Chi-Chun Lee, "*Generating fMRI-Enriched Acoustic Vectors using a Cross-Modality Adversarial Network for Emotion Recognition*" in Proceedings of ACM International Conference on Multimodal Interaction (ICMI), 2018
- [15] **Jeng-Lin Li** and Chi-Chun Lee, "*Encoding Individual Acoustic Features using Dyad-Augmented Deep Variational Representations for Dialog-level Emotion Recognition*" in Annual Conference of the International Speech Communication Association (Interspeech), 2018.
- [16] **Jeng-Lin Li**, Yi-Ming Weng, Chip-Jin Ng and Chi-Chun Lee, "*Learning Conditional Acoustic Latent Representation with Gender and Age Attributes for Automatic Pain Level Recognition*", in Annual Conference of the International Speech Communication Association (Interspeech), 2018.
- [17] Bo-Hao Su, Sung-Lin Yeh, Ming-Ya Ko, Huan-Yu Chen, Shun-Chang Zhong, **Jeng-Lin Li** and Chi-Chun Lee, "*Self-Assessed Affect Recognition using Fusion of Attentional BLSTM and Static Acoustic*

Features", in Annual Conference of the International Speech Communication Association (Interspeech), 2018.

- [18] Wei-Hao Chang, **Jeng-Lin Li**, Yun-Shao Lin, Chi-Chun Lee, "A Genre-Affect Relationship Network with Task-Specific Uncertainty Weighting for Recognizing Induced Emotion in Music" in Proceedings of the IEEE International Conference on Multimedia & Expo (ICME), 2018
- [19] Chun-Min Chang, Bo-Hao Su, Shih-Chen Lin, **Jeng-Lin Li**, Chi-Chun Lee, "A Bootstrapped Multi-View Weighted Kernel Fusion Framework for Cross-Corpus Integration of Multimodal Emotion Recognition", in The Conference on Affective Computing and Intelligent Interaction (ACII), 2017.

Abstract Paper

- [1] Bor-Sheng Ko, Yu-Fen Wang, **Jeng-Lin Li**, Hsin-An Hou, Wen-Chien Chou, Hwei-Fang Tien, Ting-Yu Chang, Chi-Chun Lee, "Prognostic Prediction with Static-Dynamic Clinical and Pathological Parameters By Machine Learning Algorithm in Acute Lymphoblastic Leukemia" in Annual Meeting of American Society of Hematology (ASH), 2020
- [2] Bor-Sheng Ko, Yu-Fen Wang, **Jeng-Lin Li**, Hsin-An Hou, Wen-Chien Chou, Hwei-Fang Tien, Ting-Yu Chang, Chi-Chun Lee, "Accurate Prediction of Gene Mutations with Flow Cytometry Immune-Phenotyping By Machine Learning Algorithm" in Annual Meeting of American Society of Hematology (ASH), 2020
- [3] Bor-Sheng Ko, Yu-Fen Wang, Chih-Chuan Lu, **Jeng-Lin Li**, Chi-Chun Lee, Jih-Luh Tang, and Hwei-Fang Tien, "Relapse and Mortality Prediction of Acute Myeloid Leukemia Patients Using Deep Bidirectional Long Short-Term Memory-Deep Neural Network Architecture" in Annual Meeting of American Society of Hematology (ASH), 2018
- [4] Yu-Fen Wang, Bor-Sheng Ko, Chi-Cheng Li, **Jeng-Lin Li**, Pei-Fang Weng, Huai-Hsuan Huang, Hsin-An Hou, Hwei-Fang Tien, Chi-Chun Lee, and Jih-Luh Tang, "An Artificial Intelligence Approach for B Lymphoblastic Leukemia Minimal Residual Disease Detection and Clinical Prognosis Prediction Using Flow Cytometry Data" in Annual Meeting of American Society of Hematology, 2017
- [5] Bor-Sheng Ko, Chi-Cheng Li, Yu-Fen Wang, **Jeng-Lin Li**, Hsin-An Hou, Pei-Fang Weng, Hwei-Fang Tien, Chi-Chun Lee, and Jih-Luh Tang, "An Artificial Intelligence Approach in Classifying Acute Myeloid Leukemia and Myelodysplastic Syndrome for Minimal Residual Disease Detection with Post Induction Prognosis Analysis Using Flow Cytometry" in Annual Meeting of American Society of Hematology, 2017
- [6] Chi-Cheng Li, Bor-Sheng Ko, Yu-Fen Wang, **Jeng-Lin Li**, Pei-Fang Weng, Hsin-An Hou, Xiu-Wen Liao, Chien-Ting Lin, Jia-Hou Liu, Hsun-I Sun, Hwei-Fang Tien, Chi-Chun Lee, and Jih-Luh Tang, "An Artificial Intelligence Approach for Predicting Allogeneic Hematopoietic Stem Cell Transplantation Outcome By Detecting Pre-Transplant Minimal Residual Disease in Acute Myeloid Leukemia Using Flow Cytometry Data" in Annual Meeting of American Society of Hematology, 2017

Experiences

AHEAD Medicine: AI for Leukemia Diagnosis (2017/01-)

- Principal AI scientist leading 4 research projects and the major product line
- Engaging in the project from the beginning through spin-off to present
- Working with global research and industry partners (e.g., BMS and UPMC) for R&D

E.SUN Bank: Text to Speech (2019/04-)

- Major developer of a deep end-to-end text-to-speech In-house solution
- Database collection protocol designs and product maintenance
- Media: https://www.discoverychannel.com.tw/news_page.php?id=57

eBizprise: Sales Prediction (2018/09-2019/09)

- Developing ML frameworks to predict ordering and sales amount for two customers
- Leading a team of 4 graduate students and transferring knowledge to engineers in the company
- Superior performances over current commercial solutions verified on 2 industry customer datasets

Ministry of Science and Technology: AI Innovation Research Center Project (2019/06-)

- Collaborating with 4 professors and leading their students to develop a demo solution
- Using visual and physiological signal for trailer reaction detection and video recommendation
- Designing data collection, core technology developments, and demo pipelines

National Taiwan University Hospital Hsinchu Branch: Research (2021/01-)

- Collaborating with physicians for breathing sound classification
- Building a platform for data collection and Developing ML algorithms

Emotibot Technologies (2017/09-2018/01)

- Technical consultant experience with my advisor
- Helping engineers for implementation speech recognition services

BIIC Lab: Interspeech Challenge (2017/01-2017/03)

- Second place in the Self-Assessed Affect Sub-Challenge (Conference paper [17])
- Leading 4 undergraduate students with another graduate student

BIIC Lab: Large-scale Database Collection

- Multimodal Movie Database: Designing data collection and labeling protocols (2020/08-2020/12)
- NNIME database: Developing human tracking algorithms (2016/01-2016/06)

Exhibition Experiences

CES 2019

Future Tech Exhibition 2018, 2019

InnoVEX 2018, 2019

Technical Skills

Python, Matlab, Pytorch, Tensorflow, Keras, HTML, Django, Docker, Linux Shell

Extracurricular Activities

Director of Folk Dance Club

2014/01-2014/12

Leader of Public Relations Section in performance of three clubs

2014/10-2015/05

Member of Public Relations Section in performance of three clubs

2013/10-2014/05