Personal Information	
Name	Pei-Chun Chang (張珮君)
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Education

PhD	National Yang Ming Chiao Tung University	Computer Science	2017.2-2024.7
	Dissertation: Music information analysis using deep neural networks (in preparation)		
Master	Chung Hua University	Computer Science and Information Engineering	2015.8-2017.1 GPA: 4.0/4.3
	Thesis: Birdsong recognition using dual-tree complex wavelet transform		
Bachelor	Chung Hua University	Computer Science and Information Engineering	2011.8-2015.7 GPA: 3.88/4.3
	Project: Image inpainting using dual-tree complex wavelet transform		

Experiences

Organization	Position	Duration	Descriptions
Dep. of Computer Science, National Yang Ming Chiao Tung Uni.	Research assistance	2017 – pres.	- Designing algorithms and analyzing signals for projects including face recognition, multi-modal/single-model sentiment analysis, stereo matching, and biomedical signal decoding (MEG, EEG, CT, and fMRI) - Conducting experiments for collecting fMRI and EEG
	Teaching assistance	2017 – 2020	- Research Project in Application of Artificial Intelligence on Medical Imaging (2020) - 3D Modeling and Printing Practice (2017) - Linear Algebra (2017).
Bachelor Program in Industrial AI, Ming Chi Uni. of Technology	Research assistance	2023.8 – pres.	- Designing algorithms and analyzing signals for projects, including music genre classification, music emotion classification, and music tempo estimation
Dep. of Computer Science, Chung Hua University	Research assistance	2014–2023.7	- Designing algorithms and analyzing signals for projects, including face recognition, music classification, and birdsong recognition
	Teaching assistance	2012 – 2016	- Multimedia software (2016) - Linear Algebra (2015, 2013) - Image Processing (2015) - Calculus (2015)

Skills and Interests	
Language	Mandarin, English
Techniques	Python, Matlab, C/C++, PHP, SQL, Git
DL Framework	Pytorch
Research Interests	Deep Learning, Pattern Recognition, Computer Vision, Music Information Retrieval, Face Recognition, Multimodal Information Analysis, Biomedical Signal Processing

Award

The honorary member of the Phi Tau Phi Scholastic Honor Society (斐陶斐榮譽會員)

Publications

Topic 1: Multimedia information retrieval (2 journals, 4 conference papers, 1 in preparation, 1 submitted)

[in preparation]
Sample-wise label correlation for Multimodal Sentiment Analysis on Noisy Datasets
Pei-Chun Chang, Meng-Hsueh Liu, Li-Fen Chen, and Yong-Sheng Chen

[submitted]
Spectrum Mixup: An Ingenious Unsupervised Frequency Harmonization Method for Enhanced Privacy-Aware Face Recognition with Synthetic Data Training
Chia-Chun Chung, Pei-Chun Chang, Yong-Sheng Chen, HaoYuan He, and Chinson Yeh

IIOF: Intra- and Inter-Feature Orthogonal Fusion of Local and Global Features for Music Emotion Recognition
Pei-Chun Chang, Yong-Sheng Chen, and Chang-Hsing Lee
Pattern Recognition, Volume 148, 2024
IF: 8.4, Rank: 25/145 in Computer Science, Artificial Intelligence; 30/275 in Engineering, Electrical & Electronic

MS-SincResNet: Joint Learning of 1D and 2D Kernels using Multi-scale SincNet and ResNet for Music Genre Classification
Pei-Chun Chang, Yong-Sheng Chen, and Chang-Hsing Lee
2021 ACM International Conference on Multimedia Retrieval (ICMR'21)

Attention-aware Feature Aggregation for Real-time Stereo Matching on Edge Devices
Jia-Ren Chang, Pei-Chun Chang, and Yong-Sheng Chen
2020 Asian Conference on Computer Vision (ACCV'20)

Local wavelet acoustic pattern: A novel time-frequency descriptor for birdsong recognition
Sheng-Bin Hsu, Chang-Hsing Lee, Pei-Chun Chang, Chin-Chuan Han, and Kuo-Chin Fan
IEEE Transactions on Multimedia, Volume 20, Issue 12, 2018
IF: 8.182, Rank: 17/164 in Computer Science, Information System; 5/110 in Computer Science, Software Engineering; 10/93 in Telecommunication

Illumination robust face recognition using spatial expansion local histogram equalization and locally linear regression classification

Pei-Chun Chang, Yong-Sheng Chen, Chang-Hsing Lee, Cheng-Chang Lien, and Chin-Chuan Han

2018 3rd International Conference on Computer and Communication Systems (ICCCS'18)

Birdsong recognition using dual-tree complex wavelet transform

Pei-Chun Chang, Chang-Hsing Lee, Sheng-Bin Hsu, Chin-Chuan Han, and Kuo-Chin Fan

2016 World Conference on Innovation, Engineering, and Technology (IET'16)

Topic 2: Perceptual content reconstruction from brain signals (2 conference papers)

Facial image reconstruction from functional magnetic resonance imaging via GAN inversion with improved attribute consistency

Pei-Chun Chang, Yan-Yu Tien, Chia-Lin Chen, Li-Fen Chen, Yong-Sheng Chen, and Hui-Ling Chan

2022 International Joint Conference on Neural Networks (IJCNN'22)

Decoding neural representations of rhythmic sounds from magnetoencephalography

Pei-Chun Chang, Jia-Ren Chang, Po-Yu Chen, Li-Kai Cheng, Jen-Chuen Hsieh, Hsin-Yen Yu, Li-Fen Chen, and Yong-Sheng Chen

2021 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP'21)

Topic 3: CT image segmentation for stroke (1 journal paper and 1 conference paper)

Toward automated segmentation for acute ischemic stroke using non-contrast computed tomography

Shih-Yen Lin, Pi-Ling Chiang, Peng-Wen Chen, Li-Hsin Cheng, Meng-Hsiang Chen, Pei-Chun Chang, Wei-Che Lin, and Yong-Sheng Chen

2022 International Journal of Computer Assisted Radiology and Surgery (IJCARS)

IF: 3.421, Rank: 57/98 in Engineering, Biomedical; 66/136 in Radiology, Nuclear Medicine & Medical Imaging; 61/213 in Surgery.

Automated segmentation model for detecting acute ischemic stroke in non-contrast computed tomography

Yong-Sheng Chen Shih-Yen Lin, Pi-Ling Chiang, Peng-Wen Chen, Li-Hsin Cheng, Meng-Hsiang Chen, Pei-Chun Chang, Wei-Che Lin

The 13th Asian-Oceanian Congress of Neuroradiology (AOCNR2021)

Projects and Competition

- MOST Projects:
  - 多模態情緒辨識及大腦網路動態於情緒對話之腦波訊號分析技術開發 (112 年度)
  - 具多樣性及稀疏性之多頭自我注意力機制之探討及其應用於音樂辨識之研究 (112 年度)
  - 應用注意力機制於音樂辨識之研究 (111 年度)
  - 情緒對話腦波實驗之多模態情緒辨識與大腦網路動態分析技術開發 (111 年度)
  - VR/AR 前瞻互動技術之研究及其在文化資產之活化應用 (IV) (106-109 年度)
  - 基於一維卷積類神經網路及長短期記憶模型之音樂情境辨識 (108 年度)
  - 言語溝通中情緒表達與理解之腦神經機轉解碼 (108 年度)
  - 以腦反應訊號進行影像音訊之重構 (108 年度)
  - 音樂訊號之局部特徵擷取與局部特徵集聚編碼 (107 年度)

- 強健性人臉影像辨識-關於照明光影變化及遮蔽效應 (106 年度)
- 當深層神經網路遇見人腦神經網路 (106 年度)
- 探索打擊樂音樂家之腦及人腦對節奏的神經編碼與解碼-敲擊人腦：聲音節奏之神經編碼及解碼 (105 年度)
- 應用小波轉換紋理特徵及詞袋模型於音樂訊號辨識之研究 (104 年度)
- 結合雙樹架構複數小波轉換及離散小波轉換於鳥類鳴聲辨識之研究 (103 年度)

➢ Other Projects:
- Deep learning-based radiophenotypic model of CT imaging in acute ischemic stroke (2019), 高雄長庚紀念醫院
- 桃園縣政府行動網頁設計 (2013), SYSTEX 精誠資訊

➢ Competition:
- Tomofun 狗音辨識 AI 百萬挑戰賽, 入決賽