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

PhD	National Yang Ming Chiao Tung University	Computer Science	2017.2-2023.12 (expected)
	Dissertation: Deep learning for music classification and perceptual content reconstruction from brain signals (in preparation)		
Master	Chung Hua University	Computer Science	2015.8-2017.1 (GPA: 4.0)
	Thesis: Birdsong recognition using dual-tree complex wavelet transform		
Bachelor	Chung Hua University	Computer Science	2011.8-2015.7 (GPA: 3.7)
	Project: Image inpainting using dual-tree complex wavelet transform		

Experiences

Organization	Position	Duration	Descriptions
Dep. of Computer Science, National Yang Ming Chiao Tung University	Research assistance	2017 – pres.	- Designing algorithms and analyzing signals for projects including biomedical signal decoding (MEG, EEG, CT and fMRI), face recognition, stereo matching - 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).
Dep. of Computer Science, Chung Hua University	Research assistance	2014 – pres.	- Designing algorithms and analyzing signals for projects including music classification, birdsong recognition, and face recognition
	Teaching assistance	2012 – 2016	- Multimedia software (2016) - Linear Algebra (2015, 2012) - Image Processing (2015) - Calculus (2015)

Skills and Interests	
Language	Mandarin, English
Techniques	Python, Matlab, C/C++
DL Framework	Pytorch
Research Interests	Deep Learning, Multimedia Information Retrieval, Biomedical Signal Processing

Award

The honorary member of the Phi Tau Phi Scholastic Honor Society (Chung Hua University)

Publications

Topic 1: Audio-based content recognition (1 journal , 2 conference papers, and 1 under review)

[under review]
Cross-layer orthogonal fusion of MS-SincResNet features for music emotion recognition
Pei-Chun Chang, Yong-Sheng Chen, and Chang-Hsing Lee

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)

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, Dec. 2018)
IF: 8.182, Rank: 17/164 in Computer Science, Information System; 5/110 in Computer Science, Software Engineering; 10/93 in Telecommunication

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)

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)

Topic 4: Visual content analysis (2 conference papers, and 1 submitted)

[submitted]
SASMU: boost the performance of generalized recognition model using synthetic face dataset
Chia-Chun Chung, Pei-Chun Chang, Yong-Sheng Chen, HaoYuan He, and Chinson Yeh

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)

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)

Projects and Competition

- MOST Projects:
  - 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