Outline

- Abstract
  - 模擬 paper、並改進 paper
  - Music type classification by spectral contrast features
- Problem Analysis
  - 問題的分析
    - Music Classification: in frequency domain, in time domain
    - 想在送 Data 進 Octave-Scale Filters 前對訊號做一些處理，以增加 model 的 accuracy
  - 改良的部分
    - Normalize (in time domain)
    - 在 Octave-Scale Filters 前先做 Wavelet 處理
    - “KL + GMM”改成 SVM
- Implementation
  - Normalize → Wavelet → FFT → Octave-Scale Filters → Peak/Valley Select and Spectral Contrast → SVM → Get model
  - 介紹每個 function 的功能
    - Wavelet
    - Octave-Scale Filters
    - Peak/Valley Select and Spectral Contrast
    - Support Vector Machine (SVM)
- Experimental Result and Discussion
  - 五種類型頻譜分析
  - Wavelet 處理前後結果分析
  - Accuracy
    - 使用 Wavelet 前後比較
  - Confusion matrix
    - 音樂相似度
- Conclusion
- Contribution
  - Method Contributions
    - Music type classification by spectral contrast features
  - Implementation Contributions
    - Wavelet code
    - KL、GMM code (??)
- Teaming
  - 陳祈瑋: Python Coding、GMM、SVM
  - 張育菘: denoise method (ex. Wavelet)、KL

- Reference
  - D. N. Jiang, L. Lu, H. J. Zhang, J. H. Tao and L. H. Cai, "Music type classification by spectral contrast features", Int. Conf. Multimedia Expo., vol. 1, pp. 113-116, 2002.
  - R. Patil, "Noise Reduction using Wavelet Transform and Singular Vector Decomposition", Procedia Computer Science, vol. 54, pp. 849-853, 2015.