Empowering Music Creation with Machine Learning

Hao-Wen Dong
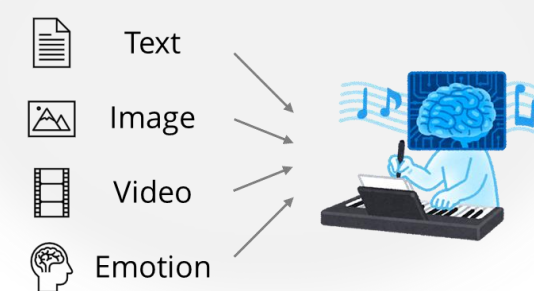
University of California San Diego

UC San Diego

Introduction

My research aims to *empower music creation with machine learning*. I build intelligent systems that learn to compose, arrange and synthesize music. My goal is to *lower the barrier of entry for music composition and democratize music creation*.

🧠 AI × Music 🎵

About Me

Hao-Wen (Herman) Dong

PhD Candidate
Computer Science & Engineering
University of California San Diego

Intern at Adobe (formerly Dolby, Amazon, Sony & Yamaha)

Homepage   LinkedIn

salu.hwdong@gmail.com

Future Directions

Multimodal controllable music generation

- Text
- Image
- Video
- Emotion

AI for Music
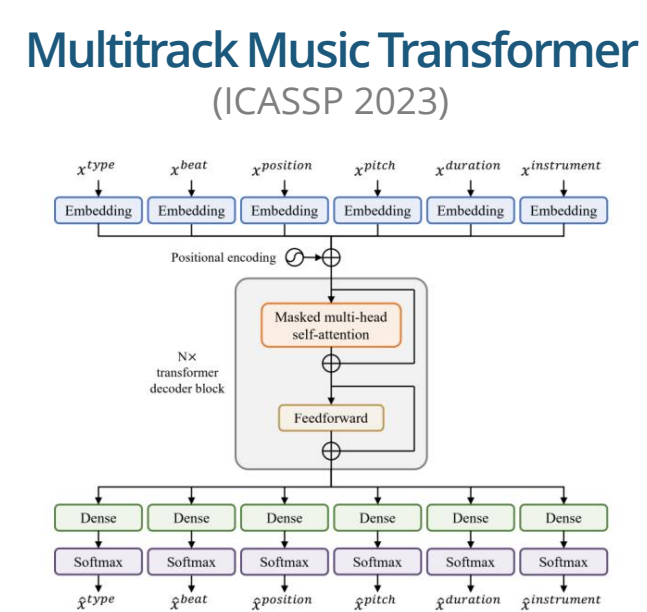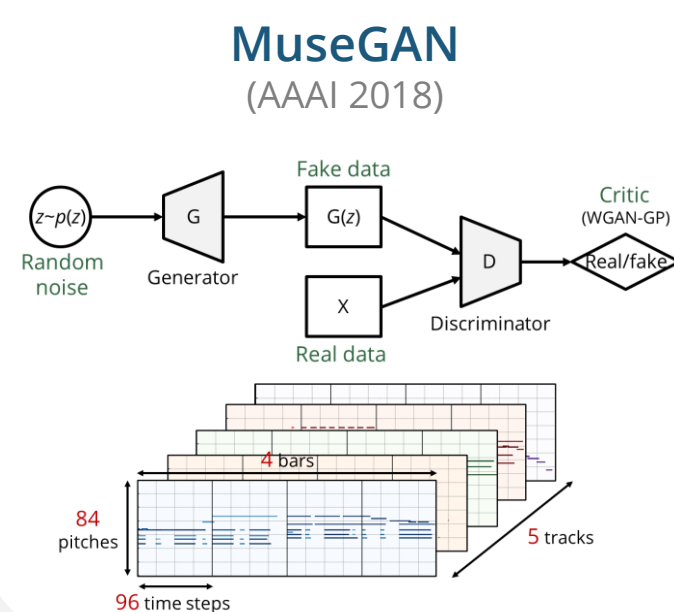*New technology creates new music*

Post-production technology for music

🧠 AI   Music 🎵

Music for AI
New music inspires new technology

Learning music through listening

Interactive human-AI music co-creation

Past Research

Multitrack Music Generation

Generating new music contents automatically

MuseGAN
(AAAI 2018)

Multitrack Music Transformer
(ICASSP 2023)

Assistive Music Creation Tools

Assisting humans in creating and performing music

Arranger
(ISMIR 2021)

Deep Performer
(ICASSP 2022)

Raw score
Aligned score
Mel spectrogram
Waveform
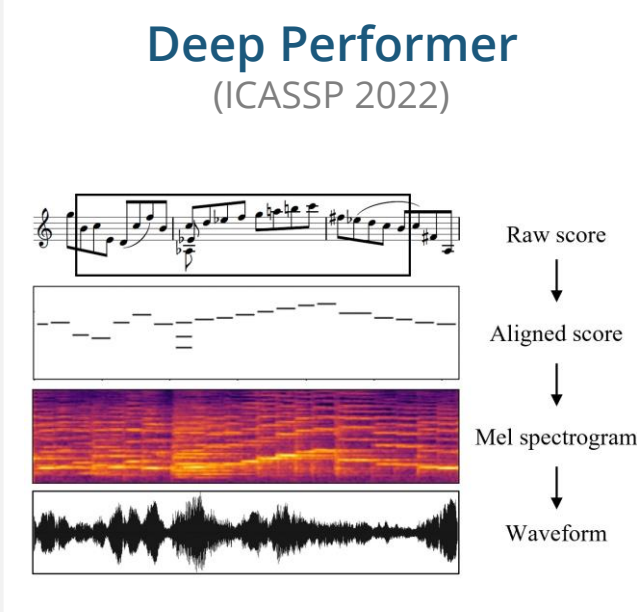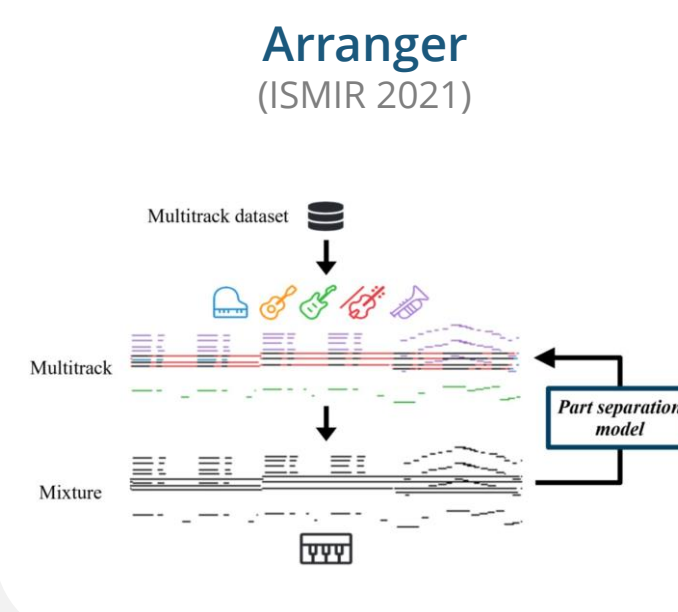
Self-supervised Learning for Audio & Music

Learning sound separation and synthesis from videos

CLIPSep
(ICLR 2023)

CLIPSonic
(Under review)