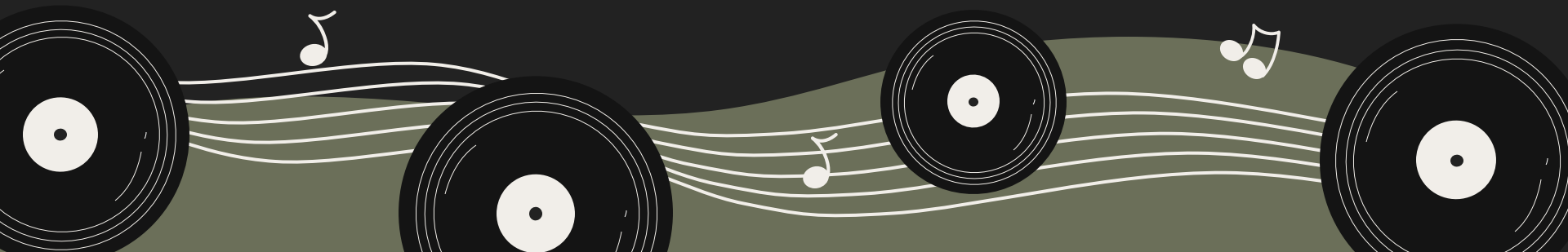


# Evolutionary Music Generation

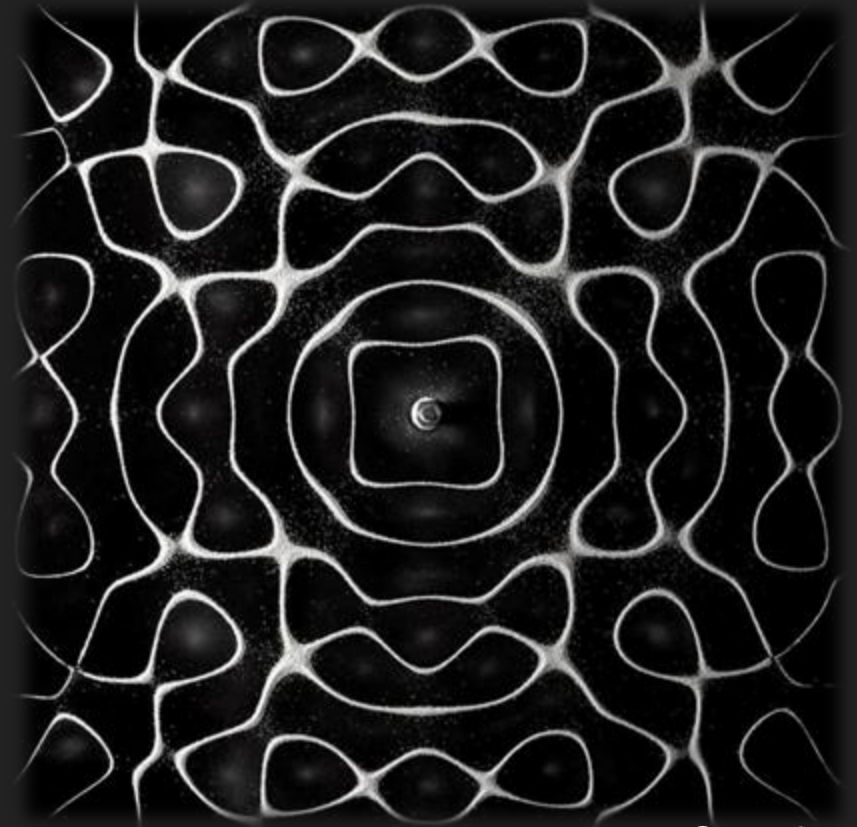
Song Recombination via Genetic Algorithms

CS5100 Sec. B



# Music by the Numbers

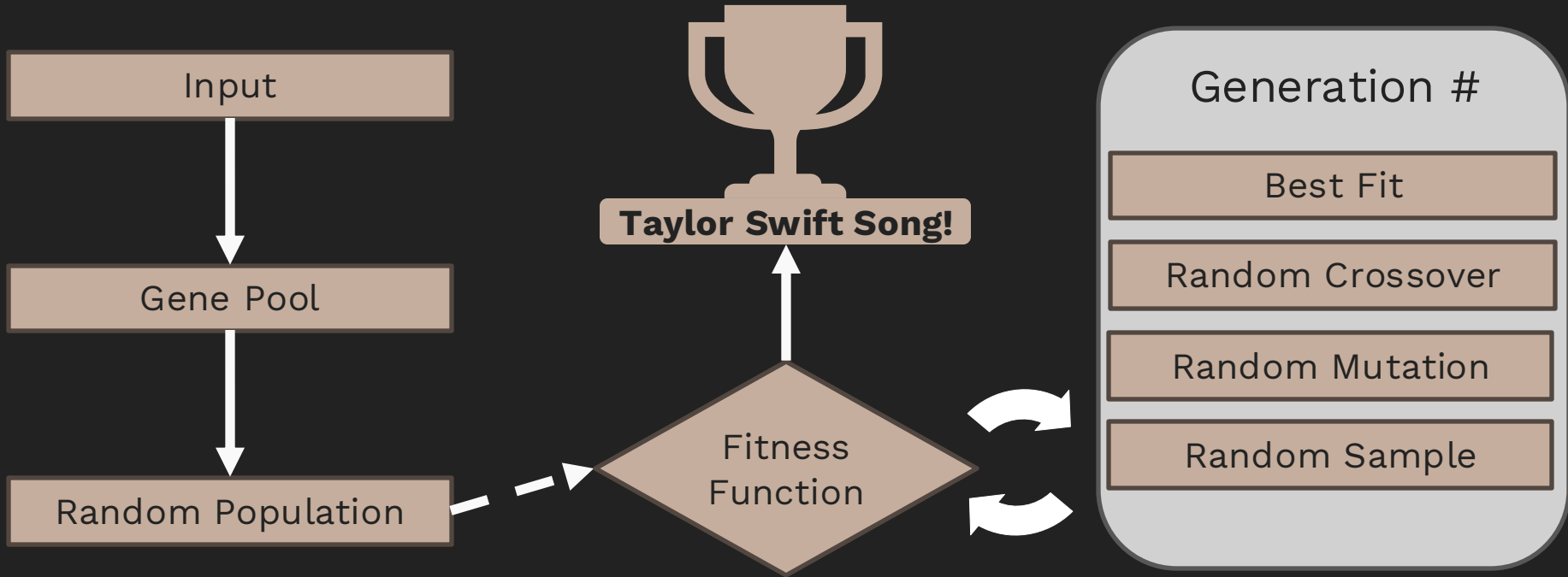
- Language
- Physics
- Algorithms
- Technology



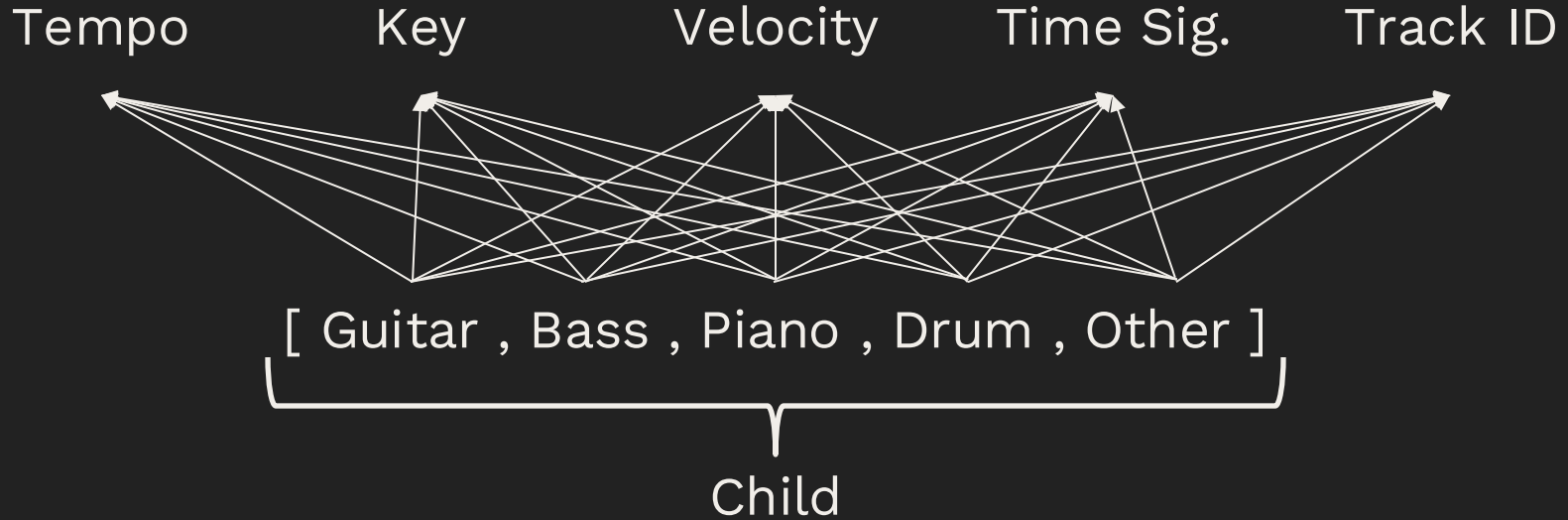
Cymatics




# Genetic Algorithms



# Gene Composition



# Song Fitness

- Tempo: proximity to  $2^{\pm n}$  of average tempo
  - Velocity: proximity to average velocity
  - Time Signature: similarity of time signature
  - Song Identity: no original song recombination
  - Key: Camelot System
- 

# Camelot System

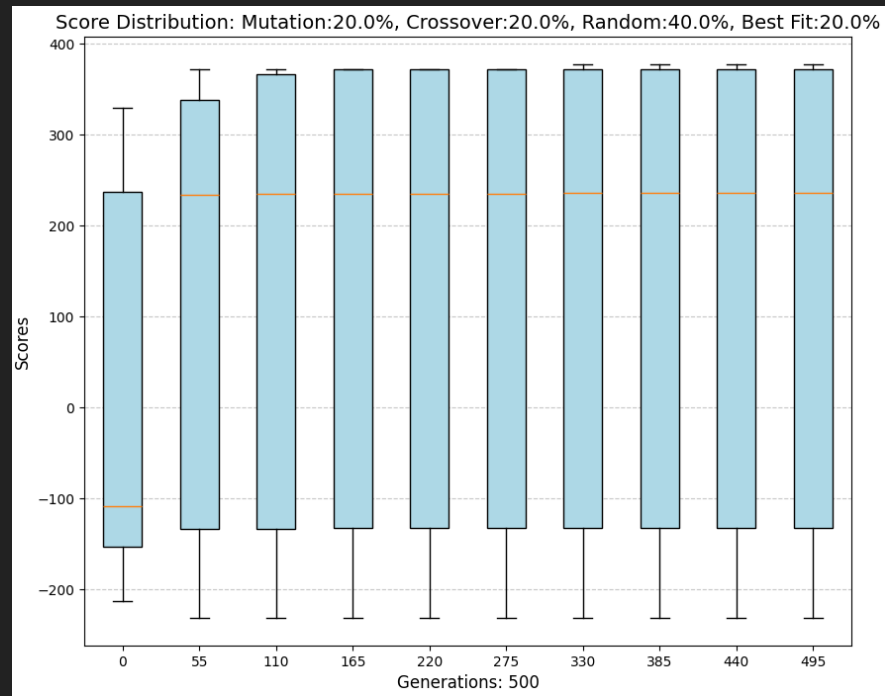
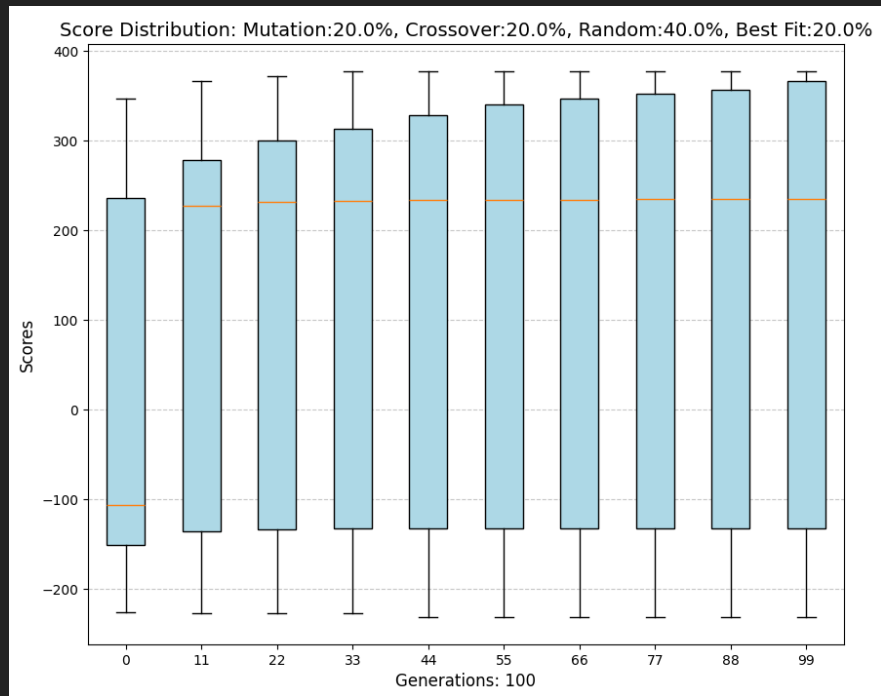




# Our Mixtape

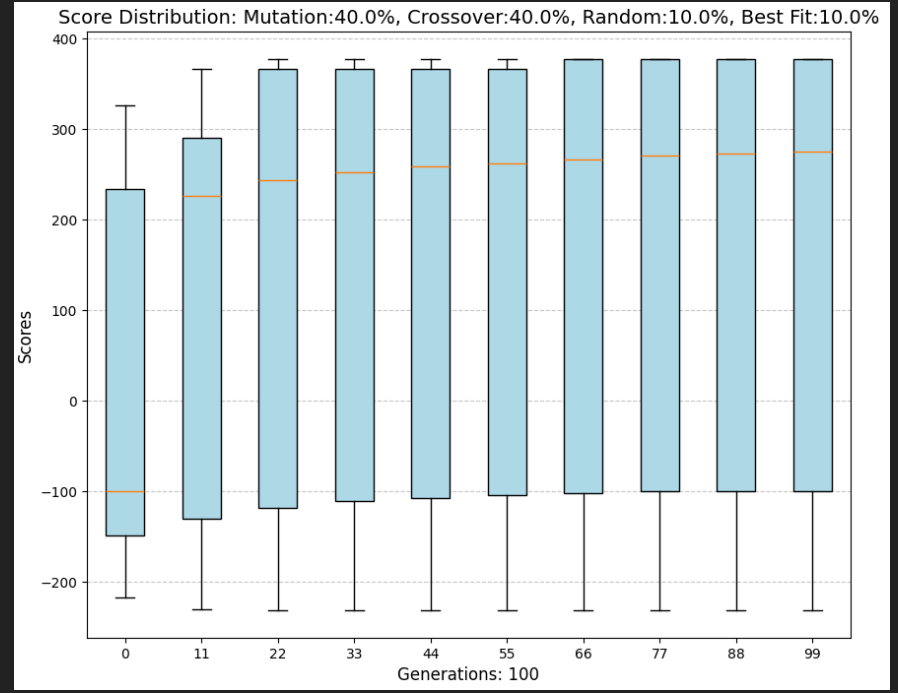
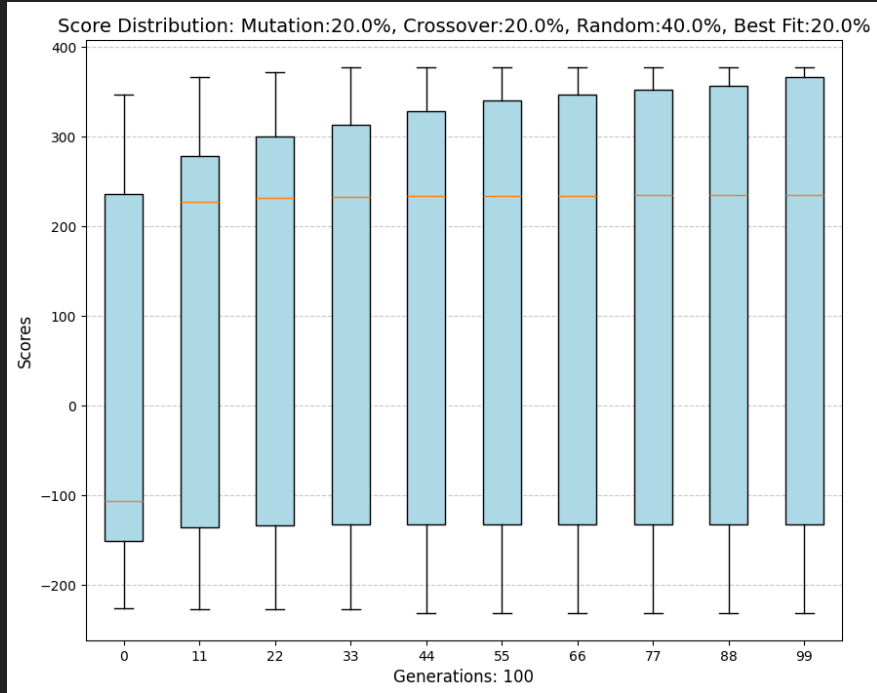
(Demo Video)

# Score vs Generation





# Score vs Composition



# Post-Production



- Feature changes
  - More complex music theory
  - Different feature weights
  - Manipulate instruments
- LLMs and lyrics?
- Fitness to genres of music?

# Meet the Band



Vishwajeet Hogale



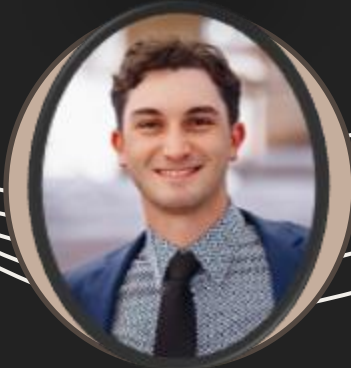
Jason Zou



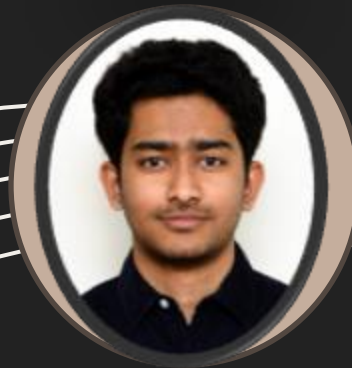
Arzoo Jiwani



Krishna Garapati



Justin Feldman



Subrahmanya  
Vennelakanti