

# Working Prototype Known Problems Report

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1. The pseudo-timestretching implementation causes the pitch to change at high variance of tempo changing as well as not having the rate exactly line up with the footstep frequency at specific BPM's. In addition, the pitch gets desynced from the BPM sometimes after frequent and abrupt changing, especially after the song speed is incredibly sped up, then suddenly brought back down.
  - a. Caused by a non-exact inverse change of the pitch and rate
  - b. Happens within the changeSpeedToFootsteps function
  - c. To fix this problem I would change libraries from AVAudio to AudioKit since AVAudio doesn't have a native timestretching function while AudioKit does
2. Total distance travelled value resets after pressing pause and then resuming
  - a. Cause is the current core motion update handler is set to only track updates from when the play button is pressed
  - b. Location of fault is in startTrackingSteps() function where it only queries live data since the function started
  - c. Solution would be to save the current distance whenever the pause button is pressed, and start the distance value after resuming at the last saved distance
3. Album cover and artist name is hard-coded because we're only working with mp3s, not through Apple Music
  - a. Occurs when the first screen switches to the second.
  - b. Fault lies in the song constructor.
  - c. Solution: We could use an API that has a database of songs(?) and retrieve album cover and artist name.
4. Audio doesn't play next song at end of track
  - a. Occurs once music starts playing
  - b. The fault lies in the play/pause function.
  - c. Solution: We could implement a completion handler that changes the song automatically once it detects that the player has stopped playing.