ISIM Lab No. 5 Report: Concerning the EKG

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In this lab, I used a electrodes and a series of op-amps and filters to see the movement of the ions in my blood with my heartbeat.

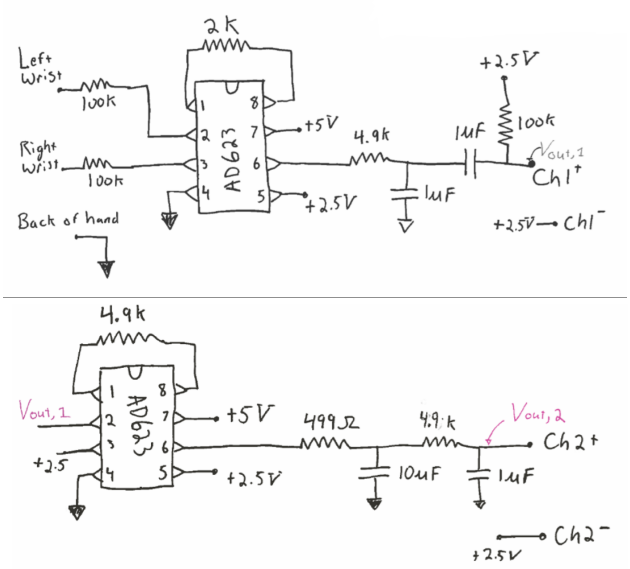

Figure 1: This is the circuit diagram I used to amplify and filter the the output from the electrodes attached to my left and right wrists.

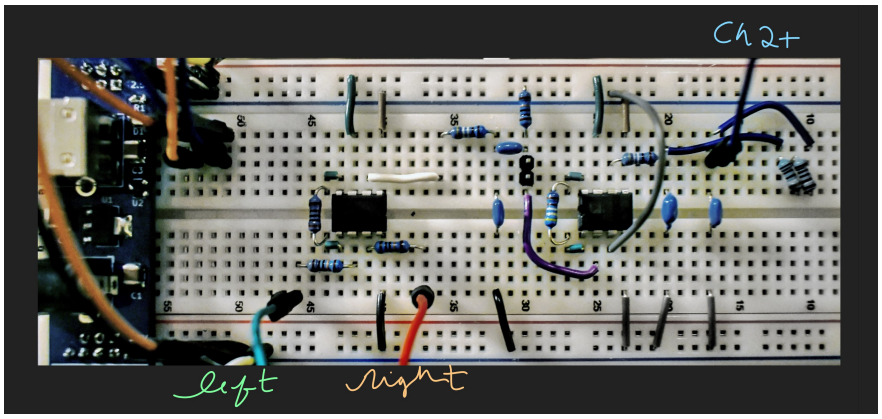

Figure 2: An image of my breadboard after my EKG tests with off-screen wires labeled to match the circuit in Figure 1.

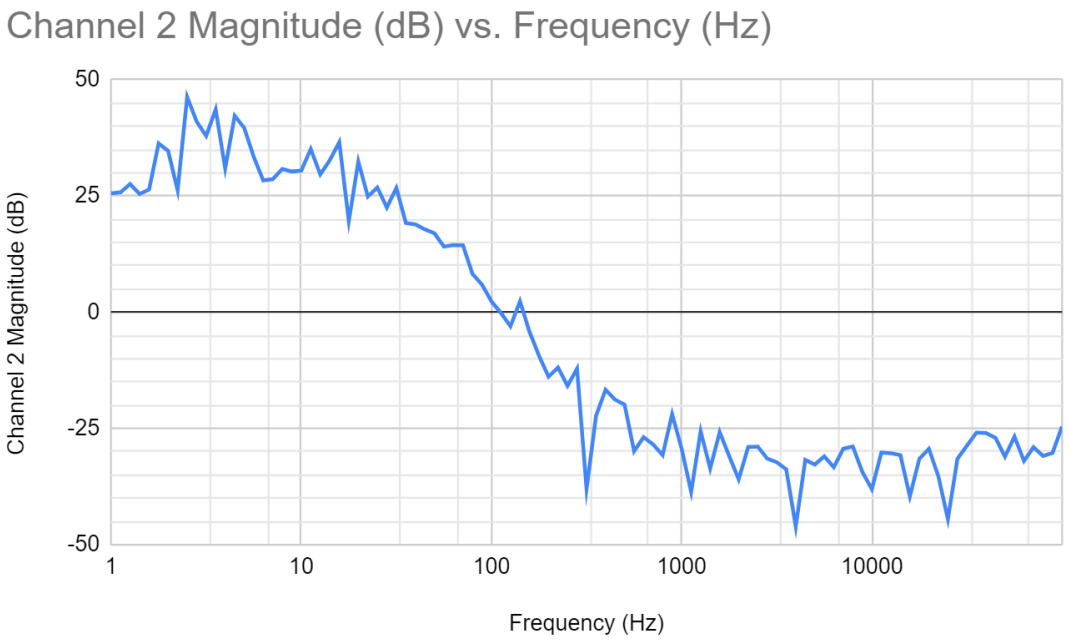

Figure 3: This bode plot illustrates the effect of the filters and amplifiers in Figure 1. For this test, the left wrist input was grounded, and the right wrist input is replaced by the W1 wire on the Analog Discovery.

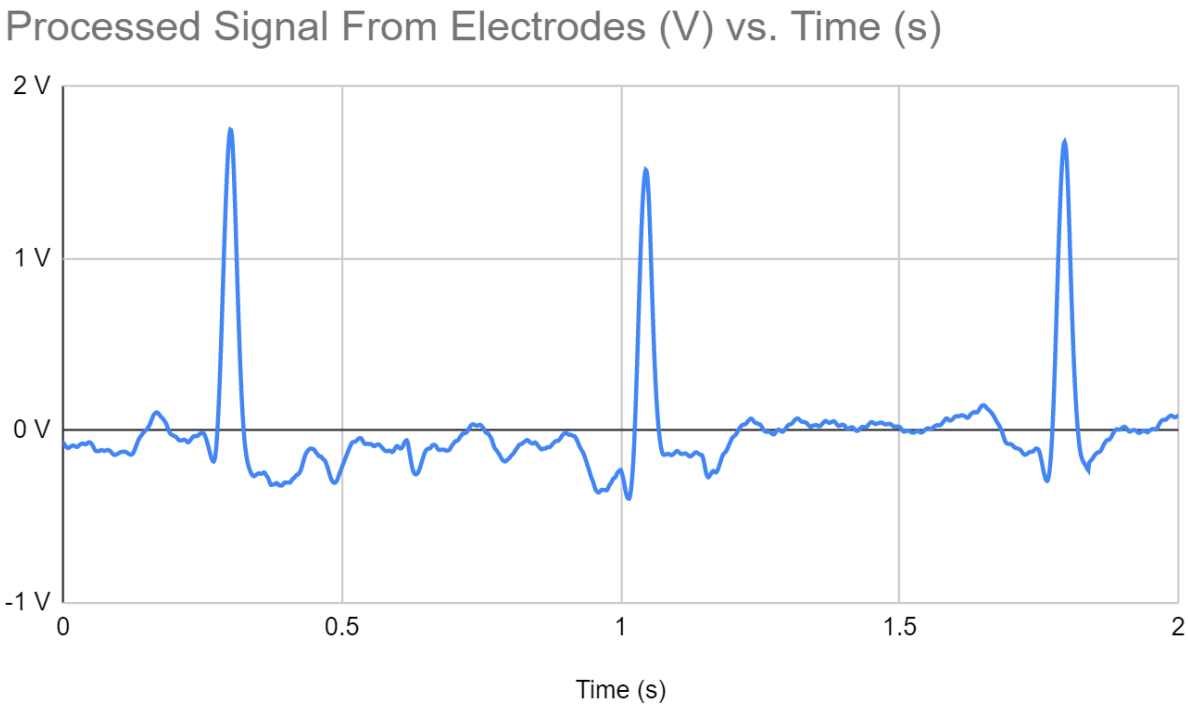

Figure 4: Two seconds from my final EKG trace. My mother says that if this is actually correct, I might be in atrial fibrillation. As this is unlikely, my EKG trace is probably below medical standards. However, you can determine my heart-rate from this graph.